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Original Articles

THE USES AND LIMITATIONS OF GENERAL ANESTHESIA AS PRODUCED BY SUBCUTANEOUS AND INTRAVASCULAR INJECTIONS.*

BY W. WAYNE BABCOCK, A.M., M.D.,
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FOR certain operations and for certain patients anesthesia by inhalation is undesirable. For operations in the vicinity of the upper respiratory passages, and in certain operations in which the patient is placed in the prone position, anesthesia by inhalation may be either inconvenient or it may interfere with the work of the operator. Again, for certain patients it is desirable to produce unconsciousness without the patient's knowledge that anesthesia is being induced, while diseases of the respiratory system frequently contraindicate irritating inhalations.

For these and, perhaps, other reasons, a number of attempts have been made to produce general anesthesia in other ways than by inhalation. A year had not elapsed after Morton's famous demonstration of ether anesthesia before Pirogoff had produced anesthesia by the introduction of ether vapor into the rectum. Rectal anesthesia, although revived from time to time, has never become popular, since it is difficult to manage, irritating to the intestinal mucous membrane, and tends to produce undesirable distention of the bowel, and at times even death through the rupture of a previously unrecognized intestinal ulcer.

Another method of inducing general anesthesia, also not new, is by intravenous injection. In Bier's method a segment of the limb is anesthetized by isolating it with Esmarch's bandages, and there is introduced into a vein from 40 to 80 c.c. of a ½ per cent. solution of para-aminobenzoyldiethylaminoethanol hydrochloride[1] in physiologic salt solution. This anesthesia, however, and its modification by injecting similar solutions into the arteries of the limb, produce

* Read at the Twelfth Annual Meeting of the American Therapeutic Society, held in Boston, Mass., May 11, 12, and 13, 1911.

[1] Novocaine.

only regional anesthesia, and, therefore, will not be considered in this communication.

In an attempt to produce general anesthesia by intravenous injection, quantities of cocaine solution have been injected into the veins, and, while some degree of general anesthesia has resulted, there is no evidence that this is either a safe or a practical method. In 1874 Oré, of Bordeaux, announced a method of general anesthesia produced by injecting a 35 per cent. watery solution of chloral hydrate into a vein of the arm. The dose was regulated by the symptoms induced. It was asserted that the method was superior to the inhalation of ether, as there was no preliminary excitement or after-nausea or vomiting. The facts that the anesthesia was of short duration, that it produced dyspnea, irregularity of heart action, and even fatal syncope, and that albumin and blood appeared in the urine after the injection were sufficient to cause the method to be abandoned.

In 1909 S. Burkhardt[2] reported his experience with an anesthesia produced by the intravenous injection of watery solutions of ether. A 5 per cent. solution in physiologic saline solution was recommended, 7 per cent. solutions of ether causing evidences of renal irritation. Solutions of chloroform were likewise found to be too irritating. The solution, warmed to 82.4° C., is introduced by means of a suitable needle into one of the prominent veins of the arm. The odor of ether soon appears upon the breath; in some patients excitation occurs, and more rarely bronchial râles.

Usually there is no secondary vomiting or other disagreeable sequela. The dose required is from 200 to 250 c.c. in children, for women 320, and for men 500 c.c. In one case 2500 c.c. were employed. In a certain percentage of the cases the reflexes were not abolished. With the production of full anesthesia the tube is clamped, interrupting the flow of ethereal solution, and as the reflexes reappear from 30 to 70 c.c. more of the solution are introduced. In some patients the anesthesia was continued for as long as one and one-half hours. Objections to the method include sudden death, as reported by Bikin, whose sixteenth patient, four minutes after the entrance of the ether solution, became pale; the respiration ceased, the pulse dropped to 40, then the heart stopped beating, and, despite artificial respiration and cardiac massage, the patient died. This patient was a poorly nourished woman of 62 with arteriosclerosis and a carcinoma of the mouth. Kuttner in 23 cases found evidence of pulmonary embolism in 2, which fortunately were not fatal. It is evident that thrombi frequently form in the vein about the needle-point, interfering with the injection and raising the danger of embolism. To avoid the objections produced by the high volatility of ether, solutions of hirudin and methylpropylcarbinolurethane[3] have been tried. Sidorenko reports 60 cases of the latter form of anesthesia, a 7.5 per cent. solution of the drug, in physiologic salt solution, being used at a temperature of 40° C.; Fetteroff, of St. Petersburg, also reports 22 cases. Evidences of anesthesia appear in from three to five

[2] Münch. med. Woch., Nov. 16, 1909.

[3] Hedonal.

minutes after beginning the injection, and the anesthesia reaches the periphery in about fifteen minutes. From 250 to 500 c.c. of the solution, and rarely as much as 1200 to 1500 c.c. of the solution, may be required. The best results seem to be obtained when from 50 to 60 c.c. of the solution enter the vein each minute. In several instances there were evidences of thrombosis in the central end of the vein injected. It is apparent that grave dangers attended the injection of such chemical solutions into the circulating blood-stream, and, as thus far developed, intravenous anesthesia cannot be commended for general use.

Although the anesthesia produced by subcutaneous injections is slower in appearing, it avoids many objections of the intravascular anesthesia and is a far safer method. The method is but a development of the narcotic anesthesia as produced by various ancient peoples. The substances injected include chiefly alkaloids derived from opium and various solanacea—morphine, apomorphine, hyoscine, scopolamine, and atropine. Subcutaneous injections of chloral have also been successfully used, but this drug is too irritating for subcutaneous use. The conjoint employment of chloral or related chemicals and of alcohol or ether by mouth or by rectum may be useful in intensifying the anesthesia. The safety is increased by securing the cross-action of a number of narcotic and anesthetic drugs. It is first to be noted that hyoscine and scopolamine may be used interchangeably, and that they are of little value in persons under 30, as in young persons the delirifacient action predominates, while in the elderly or debilitated the hypnotic action is evident.

We have employed narcotics to aid the production of anesthesia in over 2000 cases. In some cases narcotics have been used to aid the anesthetic action of ether or that of spinal anesthesia, while in not a few cases the subcutaneous injection alone, or the injection reinforced by the administration of alcohol or Hoffman's anodyne, has been used exclusively for the production of anesthesia. Our observations have proved that satisfactory surgical anesthesia may be produced in selected cases by narcotics alone, but the administration requires considerable judgment, and the technique must be varied according to the age and peculiarities of the patient. Some years ago at the Samaritan Hospital we used no other anesthetic, except in children, for a period of nearly one month, and found it possible to anesthetize satisfactorily, without inhalation, 30 per cent. of the patients that came to the operating table. About 30 per cent. more were anesthetized sufficiently to enable the operation to be done, but the reflexes were active, restraint was required, and the operation was performed under greater difficulty than if ether had been employed. In from 10 to 20 per cent. of the patients excitement and delirium, attended by marked struggling, made it difficult to carry out the operative procedure. In reviewing these cases it was found that the aged, debilitated, and cachectic were very susceptible to narcotic anesthesia, while the young and robust were resistant and showed a tendency to become delirious. By selecting patients from the former class only we were later enabled to produce satisfactory anesthesia without the additional use of ether or chloroform. For younger patients it was necessary to modify the technique, and in these the delirifacient action of hyoscine or scopolamine was found undesirable, and alcohol and apomorphine of great value.

On account of the muscular rigidity, except in patients with very relaxed or distended abdomens, none of these methods is well suited for celiotomy. It was also found difficult to abolish the reflexes for rectal operations and to a lesser degree for operations upon the hands or feet. For operations upon the brain, skull, face, jaws, neck, respiratory system, and spine the method is very satisfactory, and often gives results superior to those we have obtained by any other form of anesthesia. After experimenting with various alkaloids, including daturine, hyoscyamine, apocodeine, codeine, and extract of mandragora, it was finally decided that the most important drugs were hyoscine or scopolamine (which are probably identical), morphine, apomorphine, and alcohol or compound spirit of ether. These drugs are employed in combination, according to the peculiarity of the special case, and we now find that one may produce anesthesia in most persons above the age of 18 without resort to the inhalation of ether or chloroform. By using several of the drugs at one time one may secure a crossed action upon the central nervous system, accentuating the narcosis and reducing the danger to the patient.

The following methods are feasible:—

(*a*) *Alcohol-Apomorphine Narcosis.*—My attention was directed to the remarkable sedative influence of apomorphine in patients under the influence of alcohol some fifteen years ago. At this time a young man had been brought to the hospital with lacerated and contused wounds of the scalp who, in his acute alcoholic excitement, was combative and refused to allow his wounds to be sutured. I administered $\frac{1}{10}$ grain of apomorphine subcutaneously for its sedative effect, but found that the patient within a few moments was so insensitive to pain that he made no movement while the wounds were prepared and sutured. The surgical anesthesia, accidentally obtained in this patient, we have, during recent years, deliberately produced. As a rule, it is not convenient or desirable to produce intense alcoholism, and by the conjoint use of morphine the quantity of alcohol may be diminished. The method consists in giving sufficient diluted alcohol or strong spirit by mouth or by rectum to produce alcoholism and then to inject under the skin from $\frac{1}{15}$ to $\frac{1}{7}$ grain of apomorphine, according to the vitality and susceptibility of the patient. In from three to fifteen minutes, if the dose has been sufficient, after a brief and often ineffectual effort at emesis, the patient becomes relaxed, apparently insensible, and may remain in this condition for two or more hours, during which time various operative procedures may be carried out. It must be emphasized that the predominant action of apomorphine is sedative and hypnotic. The emetic action, although it occurs early, is secondary and has been overemphasized. The rather prevalent advice to use apomorphine as an emetic in narcotic poisoning is one of the terrible, if not criminal, errors that has crept into therapeutic teaching. There is, perhaps, no more powerful adjuvant to the action of other narcotics, and a narcotized patient, having been given this drug, frequently entirely fails to vomit as the rapidly increasing narcotism produced by apomorphine overcomes him. Those who carefully watch the effects of apomorphine as an aid in the production of narcotic anesthesia will join me in solemnly

warning the profession against the use of this drug as an emetic in any form of depressive or narcotic poisoning.

(*b*) *Scopolamine-Morphine Anesthesia.*—Schneiderlin's revival of the ancients' method of producing surgical anesthesia has met with disfavor, first, because it has been unskillfully used and, second, because it is only well adapted to certain classes of patients. The modified technique we have found efficient is as follows: One and one-half hours before the time of operation, the patient, previously prepared by baths and laxatives, receives a hypodermic injection containing morphine sulphate, $\frac{1}{6}$ grain, with hyoscine or scopolamine hydrobromide, $\frac{1}{100}$ grain. Twenty minutes later the patient's condition is carefully observed, the injection is repeated, and immediately afterward there is slowly run into the bowel an enema consisting of Hoffman's anodyne, 1 ounce; alcohol, ½ ounce; physiologic saline solution, enough to make 5 ounces. The patient is now continuously watched and the character of further injections determined by studying his susceptibility. Twenty minutes after the second injection, if the patient be old or debilitated, sufficient narcosis may have been induced so that he cannot be roused by shaking, shouting, or pinching, and is, therefore, ready for the operation. More frequently the patient is somnolent, but may be partially aroused. In such a case, if the pulse is good, a third injection containing apomorphine hydrobromide, from $\frac{1}{20}$ to $\frac{1}{10}$ grain, according to the strength of the patient, is administered. In still other cases the patient is quite wakeful, and shows only the more superficial degree of narcosis. In this event the third hypodermic may consist of morphine sulphate, $\frac{1}{6}$ grain; scopolamine or hyoscine hydrobromide, $\frac{1}{100}$ grain, and apomorphine hydrochloride, from $\frac{1}{20}$ to $\frac{1}{10}$ grain. If the patient shows a red, flushed skin, if the pupils are more or less dilated, and if there is delirium, the hyoscine or scopolamine is omitted, and the morphine and apomorphine used. On the other hand, if the pupils are small, the respiration slow, and the face rather pale, although the patient is not sufficiently narcotized, the morphine should be omitted from the third injection and the hyoscine or scopolamine used. If the heart action is weak, or if the patient is greatly debilitated, the apomorphine, which is the most powerful of the agents employed, must be avoided or used with caution. If the patient be above 40 years of age, and especially if the patient be debilitated or toxemic, in from ten to twenty minutes after the third injection, if not before the third injection, profound narcosis will be present. The effect of the apomorphine often comes on with startling rapidity. The patient who has been stupefied by the previous injections may within two or three minutes after the injection of the apomorphine raise the head, or the hand to the mouth, as if nauseated, and without vomiting instantly fall back entirely insensible, so that the most extensive operative procedures may be begun at once.

It is to be observed that the patient is to be constantly watched while under narcotic anesthesia, just as a patient is to be watched while under ether anesthesia, and that the induction of the anesthesia by the use of repeated doses, selected according to the patient's susceptibility and the effects desired, corresponds to the work of the etherizer, who drops the anesthetic upon the

gauze or withholds it, according to the condition he observes in the patient. In some cases a fifth injection may be necessary, either before the operation or during the course of some very prolonged operative procedure. The duration of the narcosis is from two to eight hours, and the patient usually awakens with no recollection of having fallen asleep or of having awakened, and not infrequently at once begins to inquire as to when the operation is to be performed.

By this method we have narcotized patients in their homes and have had them conveyed unconscious to the hospital. One patient, after an excision of a carcinoma of the parotid, was reconveyed back to her home, and there awakened some hours later entirely ignorant of the fact that she had left her bed. In this manner I have also operated upon patients who were either delirious and fought against the operative procedure or in whom it was desired to operate without the patient's knowledge that an operation was to be done at the particular time. Thus, those patients who have desired operative treatment, but who have refused through fear, cowardice, or mental perversion, have been successfully and unconsciously subjected to operative treatment. For some years we have performed nearly all craniotomies and operations upon the brain and cord of patients over 35 years of age with this form of anesthesia, excepting in those patients who were comatose from injury. Likewise, extensive plastic operations upon the face, resections of the jaw and tongue, and many of the operations upon the pharynx and larynx have thus been performed. The method is also very valuable for operations upon the thyroid. A narcosis sufficiently incomplete, so that the patient exhibits a slight muttering delirium, is useful in operating in the region of the recurrent laryngeal nerve. We have also obtained very satisfactory anesthesia in younger patients by this method in those cases where well-marked debility or asthenia was present. Thus we obtained an intense narcosis in a boy of 16 who had a large postpharyngeal fibroid tumor.

(*c*) In persons under 30 the *combination of methods* (*a*) *and* (*b*) is often desirable. The scopolamine and hyoscine are to be used cautiously and omitted if too marked a delirifacient action is observed, while full doses of alcohol, morphine, and apomorphine are often requisite.

Precautions.—The respiration and pulse should be constantly watched while the patient is under narcotic anesthesia. As the method produces respiratory depression, it should be avoided where there is marked depression of the respiratory centers or disease abolishing to a large degree pulmonary function. In conditions of profound toxemia, as in sepsis or advanced renal or hepatic disease, there may be danger in increasing the pre-existing toxemia, and the narcotics should be used very cautiously or not at all. Patients with tuberculosis or moderately advanced carcinoma are often unusually susceptible and usually are good subjects. Obviously, it is not a method to be used upon patients who are near the point of death from some hopeless disease.

At the completion of the operation 2 quarts of salt solution are run into the bowel to aid in the elimination of the drugs. If the narcosis is excessive, 3 to 5 grains of caffeine, with from $\frac{1}{20}$ to $\frac{1}{10}$ grain of strychnine, are to be

given subcutaneously, and an enema containing 1 pint of black coffee and 2 drams of tincture of capsicum in 1 quart of hot water is also administered. If cardiac failure or collapse occurs, the intravenous injection of a pint of physiologic saline solution containing 5 minims of adrenalin is probably the most powerful known means of cardiac stimulation. No incision is required, a sharp needle connected with a suitable funnel or burette being thrust into a vein in the arm. More important, and to be doubly emphasized, is the maintenance of the patency of the upper air passages in narcotic, as well as in other forms of, anesthesia. I am convinced that in many cases patients have been permitted to suffocate, the tongue having fallen back into the throat, and the movements of the muscles of respiration having suggested to the physician that breathing was being continued. Especially is this important after operations upon the tongue or floor of the mouth. In one of my patients, after excision of one-half of the tongue, not less than two residents saw the patient and ordered stimulation, but permitted the patient slowly to suffocate to death. In several other cases I have seen patients nearly die because the resident or nurse diagnosed collapse, and refused to believe, even when told, that there was respiratory obstruction—whereas all that was required was the holding forward of the tongue or of the lower jaw. I now insist that respiratory function shall be determined not by the movements of the neck, chest, or abdomen, but by the movements of a wisp of cotton placed over the mouth or nose, and that in all cases of narcotic anesthesia any sudden change in the patient is to be first treated by the holding forward of the tongue or lower jaw. It follows that in profound narcosis liquids must not be placed in the mouth. While a student I saw a case of opium poisoning in which strangulation and death soon followed the pouring of stimulants into the mouth.

The patient under narcotic anesthesia, like the patient under other forms of general anesthesia, must be continuously watched by a competent person from the time the first injection is given until the anesthetic has passed off. In the hands of the careless or incompetent it is a method too dangerous ever to be employed. I know of two asthenic alcoholics who came into the receiving room of the hospital some years ago with delirium tremens. Something between $\frac{1}{10}$ and $\frac{1}{5}$ grain of apomorphine was ordered by the resident in each case. They were left alone, and, not long after, both patients were found dead. It seems to me that each patient became asphyxiated under the narcosis of apomorphine. Ether narcosis develops during the administration of the drug; narcotic anesthesia, some time after. The induction of the one should be as carefully watched as that of the other.

Respiratory Depression.—Twice I have seen the respiratory rate reduced to three or four per minute. In neither case did harm result. The first patient promptly awakened and resumed a more normal respiratory rate when an attempt was made to introduce a catheter. Despite the shallow and very infrequent respirations there was no cyanosis or pallor, and the pulse remained good. In the second patient the normal rate of respiration was gradually resumed, enemas and hypodermic injections being used to aid in the elimination of the narcotic.

Finally, it is to be remarked that there is no universal anesthetic; nor has the ideal anesthetic been discovered. Ether is and will remain the most generally used of all the anesthetic drugs, but local and spinal anesthesia, we believe, each have a distinct sphere of usefulness. Likewise, narcotic anesthesia is useful for certain operations upon the upper part of the body under especial conditions where general, spinal, or local anesthesia is inapplicable or objectionable. When properly employed, and for selected conditions, this method of anesthesia is as yet unsurpassed, and from the patient's viewpoint is nearly ideal.

DISCUSSION.

Dr. A. Ernest Gallant, New York: I do not know whether it is fair to discuss a method one has not used, but it may be justifiable to present our experience in similar directions until we try the method. I have had no experience with injecting ether into the veins, and I have not tried to operate with a combination of morphine and scopolamine constituting the sole anesthetic, because I have always used chloroform or ether in conjunction with these drugs. The remarkable thing is to see the patients who are anesthetized in this way. I remember once I was delayed after a dose of morphine had been given hypodermically, so that it was four hours before I began operating. The patient was spoken to, walked out of the room, and lay down on the table, and the next day, when she was conscious, we asked her what she thought of that dream. She said she had not been conscious after the nurse stuck the needle in. I could probably have performed the operation without the woman recovering consciousness. Among my patients I have but few alcoholics to deal with, but I regard apomorphine highly as a sedative. It has a good effect in a sedative way; therefore, I think that what Dr. Babcock says about it is true. As to the effect of bromide, I know it will not exert as much benefit as one or two doses of apomorphine. Of course, in the method the doctor presents there is no question about the fact that the dose is the important thing. It must be in proportion to the weight of the patient; one must measure the dose and watch the patient, and it is a question of good judgment and experience. One cannot do anything without securing a condition of muscular relaxation. As to the danger of suffocation, I think that the doctor's trouble is with the tongue; the danger point is first due to the neglect on the part of most anesthetizers to see that the head is lifted forward and high enough. When during anesthesia the head is permitted to drop backward so that the cervical vertebræ arch forward and the root of the tongue drops backward, serious obstruction to respiration must result. On the other hand, when the head is fixed forward, with the chin close to the sternum, so that the cervical vertebræ form a concavity, enlarging the nasopharyngeal space to its maximum, the root of the tongue is drawn forward and cannot interfere with respiration.

Dr. Blackader: I think we must not lose sight of the fact that at the present time the safest form of anesthesia is that induced by ether given through the respiratory tract, although this may be supplemented, under special circumstances, by the previous hypodermic introduction of modifying hypnotics, such as morphine and scopolamine or hyoscine, thus rendering a smaller amount of ether necessary, and facilitating its administration. The objection to these mixed anesthesias is the interference with danger signals which may take place. If we come to actual statistics, I question whether any of these newer methods of anesthesia will give a safer anesthesia than can be obtained under ether given by the drop or open drop method. We, as an association, must be very careful in our recommendations of the newer methods until we know more about them. Such methods as those recommended by Dr. Babcock may be undertaken in large hospitals where we have every kind of aid at our hand; but should rarely be employed in private practice.

Dr. Babcock: I wish to thank you, gentlemen, for your discussion of the paper and for the additions that you have made to it; additions that I fully endorse, but did not mention on account of the limitation of time. For general and indiscriminate use I consider ether the safest anesthetic. These special methods require special conditions. Often the special method becomes valuable because the conventional anesthetic is in the particular case dangerous. Thus, for operations upon the larynx or upper jaw the danger of aspiration pneumonia and the frequent necessity of an additional tracheotomy render the use of ether especially hazardous, while narcotic anesthesia is relatively convenient and safe. As therapeutists, we should take a broader view of the subject of anesthesia. A trained anesthetist should have a far wider knowledge of anesthesia than that embraced in the action of ether alone. By being able to select the appropriate anesthetic for the particular case, be it nitrous oxide, ethyl chloride, cocaine locally, ether, chloroform; rectal, spinal, or narcotic anesthesia, not only can many unpleasant features incident to operations be ameliorated, but the mortality of the operations can be distinctly reduced. This paper is offered, therefore, not merely to present the subject of a special form of anesthesia, but to aid in stimulating a broader study of the entire subject.

PARENTAL ALCOHOLISM AS A FACTOR IN THE MENTAL DEFICIENCY OF CHILDREN: A STATISTICAL STUDY OF 117 FAMILIES.

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Under the influence of the teachings of Morel during the last century heredity was considered as the principal factor in the genesis of mental affections and of various forms of mental deficiency. We have learned, however, since that hereditary influence *per se* is not sufficient to create mental abnormalities. It is true that the morbid tendency produced by heredity cannot be suppressed; nevertheless, it is possible and sometimes not difficult to modify the organization of an individual. The latter is a complex product of hereditary and environmental factors. It is well known that environment determines to a certain degree morphological and physiological variations. Experimentally it has been demonstrated that plants transferred from a valley to the summit of a mountain become acclimatized and assume a different appearance. In the animal kingdom, species undergo evolution and transformation under the influence of the exigencies of the environment. Certain organs, for instance, atrophy because of inactivity, while others develop by virtue of their functionating.

Anatomical, physiological, and psychological characteristics are the resultant of two kinds of influences: heredity and environment. The latter corrects and modifies the hereditary tendencies. A pathological heredity by itself is not necessarily fatal. It is not usually transmitted in its pure forms. Most fre-

quently what is inherited is a certain morbid tendency, but the latter can be modified by other influences which arise during the developmental period of life.

Confining the consideration of this subject exclusively to the field of morbid psychic phenomena, we must admit that some difficulties are encountered. In any given case of mental abnormality it is quite difficult to demonstrate with incontrovertible evidence to what extent the latter is influenced by heredity and to what extent by environmental factors. In statistical studies one must not neglect to separate these two etiological causes. Since this is not always possible, one must be cautious not to become too exclusive in ascribing to one of the two factors an omnipotent rôle.

Clinical observations show that, while the ensemble of environmental influences may orient individual predisposition, inclination, and aptitude so as to impress upon the individual certain determined characteristics, nevertheless the nervous and mental makeup of the given person, determined by powerful hereditary factors transmitted from several generations, remains and always will remain a very powerful etiological cause. In collecting data concerning heredity too great caution cannot be taken, as the obstacles are very serious. No matter how careful one may be in obtaining information from the family, certain reservations must be made in regard to uncertainties and the tendency to restraint in some members of such families in revealing matters concerning individual characteristics. It is also exceedingly difficult to proceed to minute investigations of all the descendants of the patient. Many a detail escapes our notice. Another source of error which particularly concerns alcoholics is found in many diseases which are traced in members of the family as well as in the offspring. Many factors consequently present a possibility of creating pathological conditions outside of alcoholism, so that it is difficult to ascertain which belong to alcoholism itself. Individuals suffering from chronic alcoholism are not infrequently the descendants of degenerates, of the insane, so that observations of this character present still greater difficulty. What can statistics teach in such cases?

Despite the obstacles mentioned, in spite of other degenerative elements observed in families and superimposed on alcoholism, in spite of the frequent association of alcoholism with other serious pathological tendencies, it is possible, nevertheless, with a certain degree of accuracy to obtain sufficiently precise information from a considerable number of observations.

The present study of 117 families extends over a period of eight years. During that time I endeavored to collect data concerning all the cases that came under my observation and succeeded through persistent efforts in various directions in tracing the characteristic tendencies of some members of each family through three successive generations. Cases with various constitutional diseases, such as diabetes, pernicious anemia, tuberculosis, neoplasms, chronic rheumatism, elicited in the family histories have been rejected and are not included in the series under consideration. Out of 117 families there are 78 in

which alcoholism alone could be detected as a hereditary degenerative factor. In the remaining 39 there are 15 with doubtful syphilitic infection and 24 with histories of some mental disorder in some members of each family. The predominant hereditary feature in each of the 39 cases was alcoholism, so that, if the effect of other influences contributed to a certain extent to the pathological phenomena observed in the offspring, the coexisting alcoholism had unquestionably served as the most potent factor to reinforce or accentuate the obnoxious results produced by the pre-existing abnormal tendencies.

The condition of the first generation was successfully investigated in 90 families, that of the second generation in 20, and that of the third generation in the remaining 7.

I. Mental Deficiency in the Offspring of the First Generation.

The 90 families furnish a contingent of 200 individuals who are all more or less affected mentally in a quantitative sense of the term. This is certainly an appalling proportion of pathological units produced by alcoholic progenitors. A detailed analysis shows that apart from physical stigmata of degeneracy, such as cranial malformations, strabismus, anomalies of dentition, of the formation of the palate, of the ears, of various parts of the face and spinal column; also anomalies of the special senses,—deafness, mutism; congenital, partial, or complete blindness,—and, finally, various nervous phenomena of paralytic or spasmodic nature,—apart from these physical signs of degeneracy, the 200 individuals engendered by 90 alcoholized parents presented in the most striking manner important varieties of mental deficiency.

Idiocy, imbecility, feeble-mindedness were frequently accompanied by other serious disorders. Epilepsy was the most frequent affection. In 150 of the 200 this disorder existed. In infancy during dentition, convulsive seizures occurred at rare intervals. Later, in childhood and boyhood, typical epileptic seizures became manifest. Epilepsy *per se* is a sufficiently powerful factor to induce an arrest of mental development, but in the majority of the cases the mental degeneracy was evident from early childhood, before the epileptic condition became firmly established. The coexisting epilepsy naturally accentuated the pre-existing condition and interfered considerably with serious attempts to develop the mentality of the afflicted individuals.

Besides epilepsy, other episodic manifestations of morbid mentality were evident. Obsessions, phobias, irresistible impulses, tendencies to criminal acts, are all phenomena very frequently observable in neurotic persons as well as in the feeble-minded. They present no special features as far as the present study of the mentality of a generation created by alcoholized parents is concerned. They are mentioned here for the sake of completeness in dealing with the subject. Various manifestations of a vicious character, such as are observed in the so-called moral insanity cases, are also observed in feeble-minded individuals. There is no need to mention the fact that "moral insanity" of some writers is closely and intimately allied to mental deficiency. Indeed, in my opinion, the term "moral insanity" is not altogether scientific, and I believe it only obscures the real issue of the underlying condition. If moral insanity

expresses a pathological deviation in the direction of what is considered morality, of conventional laws, this deviation does not constitute a separate form of mental disorder, but abnormal phenomena of the above-mentioned character which occur in all forms of mental derangement, in genuine psychoses, and in all forms of mental deficiency. High, middle, and low grades of imbeciles present among their chief characteristics abnormal moral tendencies. At all events, the latter symptoms were all present in my cases, but there is nothing characteristic to enable us to distinguish between a low mentality in individuals created by alcoholic parents or by parents whose degenerative tendencies originate from other sources than alcohol.

I wish to call particular attention to a special characteristic feature observed in 75 out of the 200 members supplied in the first generation by 90 parents, viz., an extraordinarily great desire for alcohol at a tender age. Some of them commenced to use it at the age of eight and others at the age of puberty. The fact that in addition to mental deficiency observed in children born from alcoholic parents in the first generation a tendency to alcoholism is superimposed presents an unusual interest from the standpoint of hereditary transmission of tastes, passion, and of fatality of the laws of heredity. It tends to prove the gravity of alcoholic intoxication, which from the first generation became so disastrous in its direct consequences. If a drinking father is capable of creating a drinking son, the situation is unquestionably serious, as in such cases the vicious circle may continue indefinitely unless vigorous measures are promptly applied to interrupt it.

The alcoholic children are subject to the same disorders produced by alcohol as the alcoholic parents. Thus, delirium and confusion with visual hallucinations occurred in my patients a number of times. A stuporous state was frequently observed for weeks following the use of small quantities of alcohol. Stupor was particularly marked in the younger children, delirium in the adults. The tendency to commit crimes is quite pronounced; attempts at homicide are more frequent than at suicide.

Alcoholism in feeble-minded individuals assumes a somewhat different aspect from that in otherwise normal persons. It seems that the original mental deficiency renders the alcoholic more brutal, more vicious, less responsive to external influences, more intensely delirious, more confused, and more stuporous than a normally constituted individual who becomes intoxicated. The inherent mental deficiency lays a special mask over the individual when he uses or abuses alcohol. It is not a special or a new form of alcoholism that it creates, but an alcoholism the individual features of which are in every direction peculiarly intensified, and lead to graver consequences.

II. Mental Deficiency in the Offspring of the Second Generation.

This study embraces 78 individuals whose parentage could be traced to 20 families two generations back. Very careful inquiries and very cautiously gathered data led to the discovery of marked alcoholism in the 20 grandparents. The 78 living grandchildren presented mental abnormalities of a very grave nature. If a comparison be drawn between the degree of mental defi-

ciency in the individuals of the first generation studied above and that in the members of the second generation, we find a decidedly lower mental status in the latter than in the former. There were more idiots than imbeciles and more imbeciles than backward or feeble-minded individuals. Low moral sense, vicious tendencies, outbreaks of extreme anger, destructiveness, irresistible impulses for all sorts of crimes, were all exceedingly pronounced. In adults of this category may also be mentioned, in addition to the above symptoms, perverted sexual sense and act, theft, vagabondage, debauchery, precocious prostitution, frequent sojourn in prisons, finally alcoholism. A large number of the 78 individuals were committed to asylums because of frequent outbreaks of delirium and confusion. A number of them spent considerable time in prison because of a great variety of offenses.

It is interesting to observe that the majority of these 78 individuals were orphans (56), their parents having died early. Painstaking investigation showed that the parents were all mentally abnormal: some were imbeciles (35), others insane (25), although a few (18) were considered normal. As to the latter group, if the information concerning their normal mentality is correct, their children's degenerative state can be traced to the grandparents, whose alcoholism was an averred condition. The phenomenon of transmission of a hereditary morbid tendency to the second generation without the interference of the first generation is, generally speaking, not very rare. On the other hand, in my series of cases the supposed normal mental status of the parents could be ascertained only from lay relatives, by whom one could not expect that feeble-mindedness in a slight degree would be observed. Frequent intoxication and in some of the cases actual craving for alcohol were ascertained at an early age. From this standpoint the cases do not differ from those of the first generation studied above. Physical stigmata of degeneracy were equally observed in almost all the cases of this series. A great many of them presented various nervous manifestations not infrequently encountered in the lives of feeble-minded individuals, viz., convulsions in infancy, epilepsy later; also attacks of meningitis. In 7 a history of hydrocephalus could be detected.

To sum up, the mentally deficient individuals of the second generation in my study presented the same multiplicity of manifestations as those of the first generation, but with greater intensity and depth. The mentality was apparently more seriously deficient and the attempts at correction were met with greater difficulty than in the first case because of the gravity of the nature of the pathological condition. It is also to be observed from a few of my cases that alcoholism in grandparents may lead to mental and physical degeneracy in grandchildren without apparently affecting, or at least not to any great extent, the direct parents.

III. Mental Deficiency in the Offspring of the Third Generation.

This study comprises 21 individuals originating as a third generation from 7 families known to be alcoholic. In all of them various mental abnormalities could be traced through the two preceding generations. Great difficulty was experienced in collecting correct data, but with persistence the endeavor proved

to be quite successful. Imbecility with or without epilepsy was the main feature of these cases. Other manifestations incidental to imbecility and described in the two preceding sections were present here. These cases present a remarkable chain extending back three generations, a chain which is uninterrupted and uniformly covered by degenerative elements, and which has its original source in great-grandparents who were suffering from chronic alcoholism. It is true that in the members of the intermediate generations alcoholism was present and greatly added to the degeneration created by original alcoholic sources. The 7 cases of this series, though few in number, are, nevertheless, strikingly illustrative of the manner in which a complete mental debility is established by serial transmission of a deleterious taint which becomes more and more pronounced in each successive generation.

Conclusion.

This study embraces 298 cases of mental deficiency observed in 117 families. This number may at first sight appear small, but if we remember that only the living members were taken into consideration; that the mortality in each of the families studied was great; that death occurred at a very tender age; finally if we consider the fact that some children died early in life, and that the living presented mental and physical stigmata of degeneracy, we must logically conclude that the effect of alcoholism on the offspring is most disastrous. Confining myself to the chief subject of my investigation, viz., mental deficiency produced by parental alcoholism, I am led to conclude from this painstaking study, carried on during a period of eight years, that alcoholism is unquestionably one of the direct causes of imbecility, idiocy, and feeble-mindedness in the offspring. The pictures built up from the collected facts show that alcoholized individuals procreate degenerate and mentally feeble children. These in their turn, if permitted, continue the chain of the pathological condition, and so on endlessly unless the chain is interrupted. One such family, for example, is capable of throwing into the community dozens of useless or dangerous individuals, who if capable of multiplying will produce their like. The mental inferiority of such units leads the community backward, and its intellectual *niveau* is thus lowered.

A mentally deficient individual is unable to adapt himself to his surroundings, and his efforts in that direction are futile. Moreover, he becomes dangerous to society, as his conceptions of obligations and of conventional laws are primitive, undeveloped, and frequently perverted. A large proportion of these individuals is to be found in houses of correction, in prisons. The burden of keeping them and caring for them devolves on the community. Hence arise enormous losses from a financial and social standpoint. If by depopulation is meant loss of individuals not only in a quantitative, but also in a qualitative, sense, alcoholism is undoubtedly one of its causes. It leads to a degeneration not only of the individual, but also of the species; it is dangerous to society, as it produces a slow and progressive deterioration of the individual and an intellectual and physical sterility of the race with all its social consequences, viz., lowering of the intellectual status and depopulation.

Quite recently, in England, the Interdepartmental Committee on Physical Deterioration presented to the House of Commons a report on the effect of alcoholism. Elderton and Pearson, the reporters, expressed themselves in the following astounding manner: "Alcoholism does not appreciably affect either the efficiency or wage-earning power or the physique and ability of their offspring." They also claim that a drunken workman is of a little more value than a sober workman. Time and space do not permit of entering into a discussion of the most inaccurate and unscientifically conducted investigations of those two writers. Errors not only in judgment, but also in the mode of collecting data, errors in inferences, are all abundant in their superficial study. Such reports do considerable harm to the community, and interfere with the earnest work and efforts of the majority of scientific investigators. Horsley and Sturge, in a recent very able contribution,[1] have shown the inexcusable inaccuracy of Elderton and Pearson, whom they qualify very justly not only as unscientific writers, but also as dangerous to the cause of eugenics, which every right-minded man has at heart.

It may be of interest to mention the results of experiments conducted on animals with reference to the question of germ-plasm deterioration, which is discussed here from a psychiatric standpoint. There is no doubt that ethyl alcohol taken into the organism in any form and allowed to act for some time can produce changes in the germ cells which influence many generations of descendants. These changes are multiple, ranging from an ordinary nervous disturbance to an anomaly and deformity and to the production of fetuses which die *in utero*. These manifestations have been designated by Forel as *blastophthoria,* meaning "injury to the germ plasm."[2]

Heredity consists of the transmission of physical and mental characteristics of parents to the offspring by means of the energy of the nuclear plasm of the germ cells. After sexual union has taken place, a combination of the hereditary characteristics of both cells follows. Should any change occur in the qualities of the plasm of the germ cells, a lasting alteration will develop in the hereditary energies of these cells. Alcohol is one of the agents capable of producing the blastophthoria of Forel or germ deterioration, which, in its turn, causes many anomalies and defects involving the embryonal development of various organs. Blastophthoria or germ deterioration can be perpetuated for many successive generations through habitual hereditary transmission.

1 British Med. Jour., Jan. 14, 1911.

2 "Hygiene der Nerven und des Geistes," 1903.

THE PHYSIOLOGICAL TREATMENT OF CONSTIPATION AND OF MUCOMEMBRANOUS ENTEROCOLITIS.

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Mucomembranous enterocolitis and constipation have been receiving considerable attention in recent years. The importance of intestinal disturbances in the genesis of arthritism in its various manifestations and the predominance of enterogenic intoxications in the etiology of chronic decadence of the organism have drawn the attention of the profession to these two rebellious affections. Numerous theories as to their pathogenesis have been advanced, and as many different treatments advocated. There is, however, but little concordance of opinion upon the subject. We shall endeavor, with the aid of new experimental findings, to explain the mechanism of these intestinal disorders, and describe the treatment which has given us the best results.

Mucomembranous enterocolitis is characterized by the following triad of symptoms: constipation, mucomembranous discharge, and pain. It is a definite, constant syndrome; this constancy, however, does not imply a specific process always attributable to an identical causative agent.

As to the pathogenesis, various factors have been incriminated: Infection, hypersthenia, enteroptosis, etc. Each has its partisans and antagonists. Although each of these theories may afford an explanation of a certain number of cases, it cannot be affirmed that any of them will explain all cases any more than it can be said that all neurotic subjects, all persons in whom intestinal autointoxication and local inflammation are present, or all women with ptoses or uteroadnexal lesions, suffer from mucomembranous enterocolitis. The fact remains, however, that they all tend to give rise to the same syndrome.

Through what agency does this common result occur?

Whether it follows chronic constipation, an acute or subacute attack of dysenteriform colitis, toxic or infectious, or any other condition that might be named, the original cause of mucomembranous enterocolitis will usually have been forgotten or overlooked, so insidious is this intestinal disorder. Hence no treatment can be addressed to this original cause, and the physician will find himself confronted by a combination of fecal stasis, mucomembranous evacuations, and pain. It is the mechanism of this symptomatic triad that it is necessary to learn.

All the causes that may properly be considered in the genesis of these two affections arise from impairment of the antitoxic functions, *i.e.*, from intoxication. This underlies not only the development of mucomembranous enterocolitis, but the latter is then enabled to follow its course not only in the presence of the causal agent, but also subsequently, after the latter has disappeared. It is in the functions of the antitoxic apparatus, therefore, that we must seek the mechanism of these affections and the key to their pathogenesis.

This antitoxic apparatus consists of the liver and kidneys. The liver, as is well known, is the principal detoxicatory organ, in so far as the digestive apparatus is concerned. We may recall also that the liver may become involved not only through the portal system, but also through the hepatic artery, in the presence of a generalized infectious process.

The relation between the hepatic functions, on the one hand, and mucomembranous enterocolitis and chronic constipation, on the other, may be explained (1) by the intimate relations existing between the liver and the digestive functions; (2) through the harmful effects exerted by functional insufficiency of this organ upon the intestinal functions.

The Antitoxic Rôle of the Liver.—The antitoxic rôle of the liver is a prominent feature in the protection of the organism. Through the researches of Heger and of Schiff, and the experiments described in the thesis of Roger,[1] we know that poisons carried to the liver are arrested there and converted into less toxic substances.

These poisons may originate in a generalized infectious process, in which the liver is generally invaded through the hepatic artery; but in the majority of cases they are of intestinal origin. The liver, indeed, communicates with the intestine through the intermediary of the portal vein, the roots of which are spread over the entire length of the gastrointestinal tract. This is the most important route to the liver, and it is through it that the poisons of all sorts, carried along by the normal course of the blood, are brought into direct contact with the hepatic cell. This mechanism, according to the factors which are brought into play, may give rise in the liver to a great variety of changes, either functional or cellular, ranging from congestion to cirrhosis. "The intestine is the broadest path for the access of toxic materials; the liver, in its turn, protects the organism by arresting the poisons as they pass through it, in order to neutralize them or to throw them back into the intestine."[2]

"In the intestine infection is constant. In every individual, and at all times, the agents of intestinal putrefaction are to be found in the intestinal lumen giving rise to toxic products which the intestine absorbs, and intoxication of varying degrees is extremely frequent. That this intoxication is not more frequent, that it is not of daily occurrence, is because the organism is provided with means of self-protection,[3] and it is the liver which acts as a barrier to the poisons."

All authors, indeed, are agreed on this point. Any influence harmful to the gastrointestinal functions will react upon the liver. It is always this organ which suffers the most in the presence of digestive disorders. Any general infectious process, we may add, will react upon the liver, and all the causes adduced to explain the genesis of mucomembranous enterocolitis—infections of all sorts, superficial inflammations of the intestinal mucosa, inflammations of the uteroadnexal organs, nervous disorders,* etc.—will lead to excessive demands on the hepatic function.

* François-Franck in particular described the vasoconstrictor reflexes produced in the liver by excitation of the general sensory nerves and the splanchnics, as well as the distribution of these reflexes, their mechanical effects, and their intervention in the presence of poisons in transit through the liver.

Why does this excessive activity, with the resulting fatigue and ultimate insufficiency, react upon the digestive canal?

Van Swieten had already claimed that the cause of colitis was diminution of the hepatic secretory function. Potain considered that a diminution of the output of bile would induce an intestinal inactivity sufficiently marked to explain the constipation and all its consecutive symptoms. Baraduc described, in mucomembranous enterocolitis, the hypocholia known in England and the United States as "torpid liver," characterized by diminished biliary function of the liver. Malibran and Langenhager have reported cases of acholia associated with pigmentation. Potain calls attention to the frequency of acute gall-stone attacks during the course of colitis. An alternation of paroxysmal attacks with hepatic colic has even been met with, and Dieulafoy (cited by Vouzelle in his thesis) calls attention to the fact that if all patients suffering from cholelithiasis are avowed arthritics all suffer also from mucomembranous colitis.

Thus, all observers are agreed in recognizing the existence of an insufficiency of biliary secretion during the course of colitis. Now, it is in this condition of insufficiency that the cause of the enterocolitis is to be found,—a fact we shall show by describing the functions of the bile in the intestine.

Rôle of the Bile in Constipation and Enterocolitis.—We need not dwell upon the rôle of bile in the digestion of fats, its antiputrefactive action, and its power of activating the diastatic ferments of the pancreas. We shall study, however, the two functions which are of chief importance in the genesis of constipation and of enterocolitis: 1. Its excitomotor function. 2. Its anticoagulant function.

1. *The Excitomotor Function of the Bile.*—The researches on this subject are numerous. Without entering into detail concerning our experiments, we shall merely cite our conclusions and the facts in support thereof.

In the dog, fresh bile, or the total colloidal biliary extract used in all our experiments, when injected into the rectum caused energetic movements of defecation, as shown by the upper tracing in Fig. 1.

Fig. 1.

In man, the results were identical, and with 50 c.c. of fresh bile or of colloidal extract of the same concentration the movements of defecation were most imperative. (Over 1000 cases without a single exception.*)

As to the action on the small intestine, and on the duodenum in particular, the tracing in Fig. 2 shows very clearly the motor excitation produced by intra-

* For the details see author's work on "Etiologie et mécanisme de l'entérite mucomembraneuse et de la constipation," 3d edit., Paris.

venous injection (the bile-duct being patulous), and also the considerable increase in tonicity.

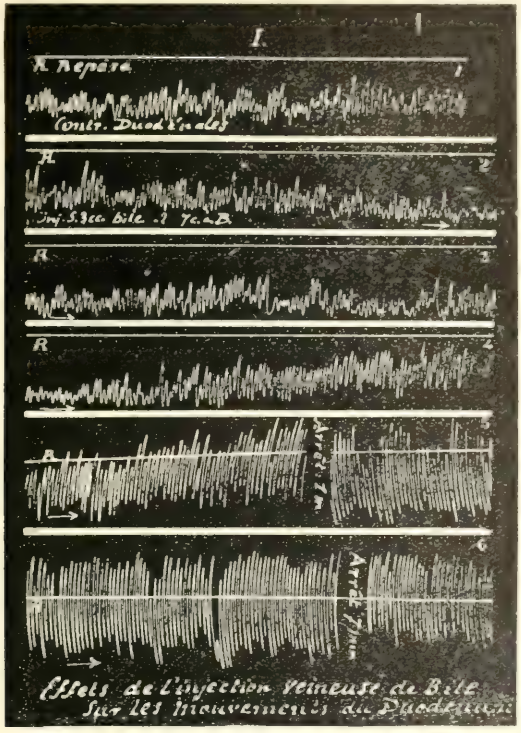

Fig. 2.

Fig. 3 shows similar results obtained by injecting directly into the duodenum.

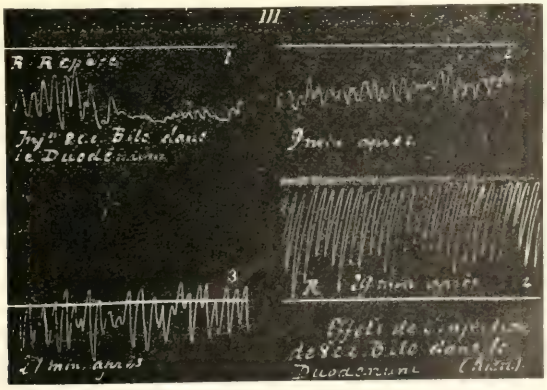

Fig. 3.

Finally, Fig. 4 shows that the intravenous injection of bile or of total colloidal extract remains without effect if the bile-duct has been ligated, *i.e.*, if the bile cannot penetrate into the intestine.

Summarized, the experiments showed (1) that bile brought into contact with the intestinal mucous membrane exerts a local excitomotor action upon the small intestine (in the duodenum, at least) as well as in the rectum; (2) that introduced into the circulation it produces a similar effect; (3) that the latter seems to depend, at least in part, upon an increase of biliary secretion due to the cholagogue influence of the injected bile.

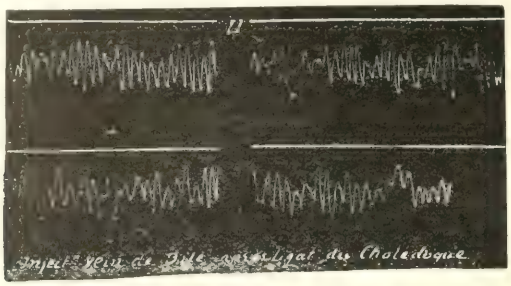

Fig. 4.

Our experimental work demonstrates, therefore, the excitomotor influence of bile upon the intestinal smooth muscle-fiber. From this action it may readily be inferred that any diminution of the biliary secretion will have the effect of retarding intestinal peristalsis and consequently lengthen the period of transit of foodstuffs through the digestive tract, *i.e.*, induce constipation.

2. *The Anticoagulant Function of the Bile.*—Professor Roger has shown the coagulating power of certain extracts of the intestinal mucous membrane on mucus. He attributes this action to a special ferment which he calls *mucinase.* Without prejudging in any way the specific nature of this coagulative effect as an enzymic action, we have produced like phenomena of coagulation *in vitro,* and have also found this property in the feces of patients suffering from the enterocolitis, and in these cases alone.

But there is present in the intestine a fluid which prevents coagulation, viz., the bile. Professor Roger had observed this fact, and we have proved it, as will be seen in the following table:—

A.	Solution of mucin* + Solution of mucinase	= coagulation.
B.	Solution of mucin + Solution of mucinase + Solution of bile extract†	= no coagulation.

We may conclude from our experiments‡ that the false membrane is the result of the coagulation of mucus under the influence of a coagulant factor which is brought into play through diminution of the biliary secretion. Thus

* The mucin used comprised both the commercial mucin, mucin prepared in the laboratory, and that specially prepared by Adrian.

† We used indifferently either fresh bile or the colloidal biliary extract specially prepared by Mariani, and the results obtained were identical.

‡ *Loc. cit.*

in opposition to two symptoms, (*a*) constipation, (*b*) coagulation of mucus, we have a secretion which is (*a*) excitomotor, (*b*) anticoagulant.

It is plain, therefore, that intestinal motor disturbances and coagulation of the mucus are two symptoms which depend upon deficiency of bile. The appearance of the coagulant power alone separates constipation from mucomembranous enterocolitis. Consequently everything is dependent upon impairment of the liver induced by some injurious influence or other,—infections of all kinds, uteroadnexal inflammations in women, etc.

When the deficiency of bile is slight, the constipation may be termed accidental; if the liver is overworked repeatedly and for a long period, obstinate constipation will become established, and may be accompanied, either from the outset or later, according to the rapid or slow development of the coagulating factor, by coagulation of the mucus, thus constituting mucomembranous enterocolitis.

We are justified, then, in concluding that mucomembranous enterocolitis and true constipation are closely related to insufficiency of the secretion of bile.

Whether, however, the syndrome be established at the beginning or progressively, the fecal stasis and the superficial irritation of the mucous membrane through the presence of a fecal mass also favor the production and reabsorption of toxic products, and a vicious circle is thus established: Fecal stasis, by exciting the production and reabsorption of putrefactive products, brings an excess of work on the liver, which diminishes its secretion; this diminution of bile entails, in its turn, retarded evacuation,—we thus have a vicious circle from which the patient can only emerge with difficulty; in other words, a chronic affection has become established.

Treatment.—Mucomembranous enterocolitis and constipation being the result of insufficiency of the biliary secretion, their treatment becomes a simple one. The general indications are: (1) Reduction to a minimum of the quantity of toxic and putrefactive products in the intestine by an appropriate diet. (2) Shortening of the period of transit of food through the alimentary tract and prevention of the coagulation of mucus by a treatment consisting, rationally, of a cholagogue, the best being bile itself.

Diet.—We shall not dwell upon the diet in the acute attack, which is that classically recommended, viz., water alone for at least twenty-four hours, sometimes more, according to the case, followed by a vegetable broth. It soon becomes necessary, however, to add more nourishing food.

We advise strongly against eggs and milk, and prescribe for our patients purées, and soon afterward boiled vegetables, to be followed, after the attack has passed, by the diet which we shall now describe in detail.

This diet must fulfill two conditions: (1) It should lead to a minimum of putrefaction. (2) It should leave as residue a soft, easily eliminated mass.

To satisfy the first condition it is necessary (*a*) to proscribe all readily putrescible albumins, such as egg-albumin; (*b*) to diminish the quantity of fats, which by their absorption in the form of an emulsion in bile diminish the quantity of bile acting as an antiputrefactive and antitoxic, and delay the transit of foodstuffs down the alimentary tract.

To satisfy the second condition, the intestine must be filled by a soft, non-putrescible mass,—cellulose. It is useless to have recourse to the medicated geloses, as has been attempted in the past few years. I say "medicated" because the various preparations having a basis of agar-agar are in reality disguised laxatives, and contain cascarine, bourdaine, etc. It is much simpler for the physician, and more agreeable for the patient, to resort to ordinary vegetables containing a large proportion or consisting almost exclusively of cellulose,—salads, for instance. It is such a diet, which we have employed in over 2000 cases, that is described below.

The following general rules should be observed: (1) Abstain from pure milk, eggs, chocolate, cocoa, ice-cream, sorrel. (2) Use plainly cooked food, prepared always with fresh butter. (3) Eat toasted bread or crackers. (4) Drink water during meals, and various hot infusions afterward. (5) Masticate thoroughly and eat slowly.

Composition of the Meals.—Morning, 8 o'clock: Choice between vegetable broth; coffee or tea and milk, with toast and marmalade; milk soup (as mentioned under evening meal).

10 o'clock: Light meal *if desired,* according to the general condition and especially the degree of emaciation of the patient. Dry biscuits or cakes, or lean ham, not heavily salted, with toast, or fresh cheese with toast or biscuits, preserves, marmalade.

Noon: (1) Choice between the three categories of meat here given; two meat dishes may be selected. Roast or broiled meats, hot or cold, to be cut into small pieces, either beef, lamb, veal (lean cutlets) or rabbit. Poultry: chicken, turkey, or squabs. Fish: sole, whiting, turbot, flounder, etc. (salmon, sardines, herring, mackerel, and tunny prohibited). Have these roasted or fried, and remove the skin from the poultry and fish.

(2) Eat cooked green vegetables,—spinach, chicory, lettuce, cress, cooked salads of all sorts, artichokes, etc. Abstain from cabbage, mushrooms, truffles, sorrel. Raw salad with lemon-juice may be permitted in certain cases.

(3) Cooked fruits, marmalades, raw or cooked prunes, dry cakes, and fresh peaches or grapes (in small amount only).

4 o'clock: Choice between (*a*) marmalade or fruit with toast, biscuits, or dry cookies. (*b*) Plain dry cakes. (*c*) Tender, lean ham, but slightly salted. (*d*) Fresh Swiss or Holland cheese. Hot beverages or water, as much as desired.

7 o'clock: Vegetable broths with vermicelli or Italian pastes; or milk soup (one-fifth or one-half milk, according to the susceptibility of the patient), with sago, tapioca, cassava, rice, vermicelli, or Italian pastes; or soup with milk-flour, or well-cooked porridge of oatmeal, lentils, or corn.

Afterward, noodles or macaroni cooked in water, with fresh butter added at the time of serving, if desired, or purée of potatoes (with milk, or with fresh butter), peas, beans, or flageolets. Use only pastes (macaroni, noodles, etc.) made without eggs. Drink water as at noon, and follow the meal with a cup of some hot infusion. Desserts: Cooked fruits or marmalades.

Use no pepper or mustard, and no vinegar, in the preparation of the food.

This general diet is, of course, subject to variations in particular cases, and may be altered according to the needs of the patients.

Bile Therapy.—With the above diet there must be combined some measure to stimulate the biliary secretion, *i.e.,* a cholagogue must be given. The best and most powerful is bile itself. When, however, this secretion is administered as such, after desiccation, it contains, among other products, nucleoalbumins which readily undergo putrefaction. We found it preferable, therefore, to use a specially prepared extract, containing all the active substances, and of constant composition. As such it represents ten times its weight of fresh bile; in other words, 1 gram of this extract is equivalent to 10 grams of fresh bile. It has the physiological action of the latter, because the component substances are present in the same colloidal condition.

Knowing exactly the relative amount of active bile which is being administered to the patient, it is thus easy to adjust the dose in correspondence with the degree of delay in the transit of food through the digestive tract and the intensity of the coagulation of mucus.

The extract may be said to be identical with fresh bile, thus constituting an ideal means of bile opotherapy. To identify it from other bile preparations I have termed this extract "antimucose" and have appended to this term the name of the Paris chemist, Dr. Jacques Mariani, who, of the various chemists tried, was alone able to furnish a stable preparation, bile containing, even after desiccation, the putrescible nucleoalbumins previously referred to. I have found it advantageous to have three preparations available: (1) keratin-coated dragées, each containing 0.20 Gm. of the extract; (2) suppositories, and (3) ampoules of 50 c.c. in which the biliary substances, dissolved in water, are brought to the concentration of normal bile.

The administration of the dragées by the mouth is convenient and certain. The bile-extract acts first by virtue of its own properties and then through stimulation of the biliary secretion. The quantity given is gauged according to the case: usually 6, or 8, 10, 12, etc., in the twenty-four hours, if necessary. The amount is only limited by the effect to be produced; if the excitation is too pronounced, a profuse discharge with colic will occur, of which the patient should be forewarned. Generally, the abundance of the material evacuated corresponds with the degree of obstruction of the large intestine. In fact, it is necessary that the large intestine should be cleaned out at the beginning of the treatment. No injections that will distend the intestinal wall, however, should be used; at most should a small injection of oil be given in the evening. The laxative property which we have previously shown to exist in the bile-extract should be made use of.

The suppositories of antimucose bile-extract bring into play *in situ* the excitomotor action of bile. Their action is powerful, and truly constitutes a re-education of the function of defecation. They should be discontinued as soon as there are natural stools.

In serious cases, with intestinal obstruction, it is convenient to use a

solution of the extract having the same concentration as fresh bile. This solution, prepared in sterilized ampoules of 50 c.c. each, is sufficiently powerful to be used before resorting to electric enemas and may be used as often as desired without causing any harmful effect.

It is by treating our patients in this way, *i.e.*, by means of the diet we have described and by the administration of the total extract of bile in the several forms mentioned, that we have been enabled to obtain numerous recoveries among the cases, over 2000 in number, that we have submitted to this essentially physiological treatment.

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GENERAL PARESIS, TABES, AND CEREBROSPINAL SYPHILIS.*

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Etiology.—In all three conditions we have, as the primary cause, syphilis. In general paresis and tabes no active elements of the primary infection are present, that is, no spirochetæ are found in the diseased tissues. We have rather the effects, probably, of toxins, which manifest themselves in the induction of a fibrosis of the nerve-tissue and blood-vessels. Probably 5 to 10 per cent. of those acquiring syphilis are affected with general paresis or tabes, and a like proportion with syphilis of the nervous system. We should divide these diseases into two classes: (*a*) general paresis and tabes; (*b*) cerebrospinal syphilis. The first class includes parasyphilitic disorders and the

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second a syphilitic affection of the nervous system. An important feature is the time elapsing between the initial infection and the appearance of the lesions of the nervous system in syphilis and in parasyphilis. In parasyphilitic diseases,—general paresis and tabes,—the disorder rarely shows itself before ten years have elapsed and often still later, while in syphilis it usually occurs within five years.

Other causes are important factors in exciting the diseases under consideration: Injury, strain, overexertion; exhausting diseases, such as typhoid fever, excesses, alcohol, venery, heredity, etc. Perhaps without these exciting agents no involvement of the nervous system would take place; but the converse is still more positive, viz., that without syphilis there would probably be no general paresis or tabes.

Symptomatology.—Between general paresis and tabes there are many points of resemblance, as well as many of difference. As we have seen, these affections occur at about the same time after the primary infection and are both parasyphilitic. Each may present a long prodromal period before the symptoms become prominent. This is, perhaps, more clearly observed in tabes, when carefully investigated, than in general paresis, but even in the latter the history of the disease, before acute mental disturbance develops, will often reveal the fact that there has been some change in character or personality months or even years before, which was not fully appreciated. In tabes there may be a history of pain, or anesthesia, or some slight vesical weakness, or uncertainty of gait which existed a long time before the patient consulted a physician. Probably at the time a careful examination of the pupillary reactions in both diseases would have shown partial or complete Argyll-Robertson pupils. I have seen the Argyll-Robertson pupil years before any of the clinical manifestations appeared. Indeed, I consider this symptom the most important—the cardinal symptom—in the diagnosis of general paresis or tabes, hesitating without its presence to make a positive diagnosis. In one case where the diagnosis was important from a legal point of view, the mental side was positive; the absence of the Argyll-Robertson reaction, however, led us to qualify the diagnosis and therefore the prognosis; the wisdom of this was shown two years later by the recovery of the patient. The importance of this symptom cannot be overestimated, as its early manifestation gives us the only possibility of cure or stay of the disease by treatment.

The two characteristics just referred to—prodromal period and Argyll-Robertson pupil—are common to both diseases, general paresis and tabes. The other symptoms, while in some degree similar in each, differ so widely in intensity as almost to be different in nature. Many authorities, especially Mott and Ferrier, are very positive that the two diseases are identical, the clinical differences between them being due merely to the situation of the lesion, while the nature of the pathological changes is the same. I think, however, that when we take up the course and symptoms and study them individually the differences will show themselves most markedly.

Confining ourselves to the spinal cord lesion and the cranial nerves, we find, in general paresis, either spasticity and exaggerated reflexes (which cer-

tainly are not symptomatic of tabes) or loss of reflexes with ataxia of a mild degree, rarely as extreme as that found in tabes of the typical form. Again, in general paresis we often observe spastic paraplegia and ataxia, representing a combined sclerosis of the spinal cord, as is shown by the pathological changes. In tabes the spinal symptoms are all of the sensory type, as shown in the pains, the paresthesias, and the ataxia or loss of the muscular sense, but never of the motor type,—paralysis, contractures. The latter conditions, when present, are caused by disuse, never by a true lesion of the spinal cord involving its motor or lateral tracts. The terminal stage of tabes, so-called the "paralytic," is a misnomer: There is no true paralysis; there is simply a complete loss of direction of motion.

The sensory side of the disease in tabes is shown by the extreme pain,—not only the lightning-like, stabbing pains of the extremities and trunk, but also the crises of rectal, vesical, cardiac, and gastric origin. These are infrequent in general paresis; even in the so-called "tabetic type" of general paresis they are rarely extreme.

Vesical paresis, so common in tabes, is unusual in general paresis. We must not confuse mental weakness and inattention to emptying the bladder with paralysis of that organ.

We might mention also the joint involvements and the foot ulcers, which, indeed, while not common in tabes, are certainly not present in general paresis.

The cranial nerve lesions, with the exception of the oculomotor, also differ in the two diseases. Optic atrophy is rare in general paresis, and especially is this so in the cerebral type. Affections of the third nerve such as are represented in ptosis and paralysis of ocular muscles, while common in tabes, are rare in general paresis, even of the tabetic type.

No case of general paresis runs its course without spinal cord involvement, probably of both the lateral and posterior columns, but in no case is there such complete involvement of the posterior columns as is seen in typical tabes.

Another important point is the duration of the two diseases. General paresis lasts in a typical cerebral form about three years; in the tabetic and irregular forms possibly five or even ten years; these latter cases are unusual. Tabes lasts ten or twenty years, unless some intercurrent complication, possibly cystitis, abruptly ends the case.

Passing now to the mental symptoms: In tabes, if the affection remains confined to the spinal cord, there are no mental symptoms. The mind is unaffected; the intellect is as acute as at the onset of the disease. If these diseases were really identical, it is not probable that the lesion could remain for twenty years confined to the spinal cord alone. The converse is not true: General paresis always manifests spinal symptoms, unimportant as compared with the mental, but still always present.

The mental symptoms of general paresis are so well defined—grandiose, exaggerated delusions of power, strength, riches, etc., and, in recent years, the depression or dementia even in the early stages—that there is no possibility of mistaking them in our cases of tabes, if present. We do, indeed, find, after many years, mental disturbances in some cases of tabes, as in other chronic

diseases, but these disturbances do not present the special characteristics of those of general paresis.

Pathology.—The pathological condition in general paresis consists essentially in an involvement of the cerebral meninges, especially the pia mater, and the cerebral cortex, affecting the cortical cells or neurons. There is also an early involvement of the associative fibers. This explains in part the mental side of the symptoms, *i.e.*, the exaltation or depression and loss of association of ideas. The blood-vessels, when involved, are not occluded by the thickening of their walls, as is frequently the case in syphilis of the brain. The cranial nerves and the spinal tracts are the seat of degeneration. In tabes the initial lesion resides in the spinal ganglion and the neurons of the posterior column lying just outside the posterior gray horns; later the posterior nerve roots and columns are involved. Rarely do we find the lateral columns involved, except in protracted cases, and then only in a limited degree. The cranial nerves are usually involved more extensively than in general paresis. The blood-vessels are narrowed in caliber, and there are degenerative changes in their walls resembling the changes found in general paresis. The distinction in the two diseases is the same as pointed out by Mott and Ferrier, but it is one which remains definite and is valuable as a differential point in diagnosis.

Cerebrospinal Syphilis.—This differs etiologically, clinically, and pathologically from the parasyphilitic diseases, general paresis and tabes. Etiologically we have here the primary syphilitic infection, which directly by its presence, as shown by the spirochetæ, infiltrates the nerve-tissues and blood-vessels, impairs the function, and may destroy the structure, of those elements.

The early involvement of the nervous system—within a few years, even in some cases in a few weeks—is diagnostic of primary syphilis. Some of the symptoms resemble general paresis and tabes, especially the latter. The pupil is suggestive of the Argyll-Robertson syndrome, being sluggish in its reaction to light. Ocular muscle paralysis is usually present, often evanescent. There may be tabetic symptoms,—loss of reflexes resembling, indeed, tabes,—but their onset has been too rapid to be mistaken for the slow progressive course of tabes. Myelitis is common, or poliomyelitis, generally of the chronic type.

The mental symptoms, especially in alcoholic cases, often make a diagnosis from general paresis difficult. In the typical cerebral cases of general paresis, the course is usually rapid, dementia, convulsions, contractures of the extremities closing the scene. Of late years there seems to have developed a different type of the disease, longer in duration and less marked by exaltation; indeed, depression and early dementia are present. This is more often the case when there are tabetic symptoms, but also occurs when the reflexes are exaggerated from the beginning.

Tabes has not changed in its symptomatology as the disease has been further studied. It is usually a protracted affection, pain, ataxia, vesical weakness, Argyll-Robertson pupils, and other cranial nerve involvement being the rule. The mental condition usually remains uninfluenced to the end.

The course of syphilis of the nervous system, as would be expected from its pathology, presents an entirely different picture. It is manifested in local

symptoms, cerebral paralysis, focal epileptic seizures, cranial nerve lesions, transverse myelitis, poliomyelitis, etc.,—conditions not necessarily permanent, as the infiltration may be absorbed.

The *prognosis* is unfavorable in general paresis and tabes, although in the latter all the symptoms may be delayed in their course; no destroyed tissue is ever renewed. In cerebrospinal syphilis complete recovery may at times take place.

Treatment.—I shall only refer to the new remedy, dioxydiamidoarsenobenzol. As yet, in the parasyphilitic affections, it is probably as ineffective as mercury and iodide of potassium. In primary syphilis, it is certainly very active in its results, in certain manifestations more effective than mercury and iodide of potassium.

Whether it will prove effective in preventing the later involvement of the nervous system can only be learned through further experience in its use.

GENERAL PRACTITIONER OR OPTICIAN.

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Perhaps no one except the wholesale manufacturer of optical goods realizes the vast proportions to which the wearing of glasses has grown in the last quarter of a century. The time is not so far past when only elderly people used them, and then in a shamefaced way. Nowadays the young wear glasses nearly as often as the old. The ignorant Italian still thinks them a confession of age and an impediment to matrimony, but many people are going to the other extreme, and considering them not from the standpoint of eye-sight alone, but from that of cosmetic effect. Probably ten million people in America today are wearing glasses, and the number is rapidly increasing; of this vast number probably not 1 in 25 has ever been examined by a physician.

Our forefathers, when they approached the age of 50 and felt that the inevitable could no longer be postponed, went to a jewelry shop and selected their own glasses, partly because in many cases of simple old sight this was a very satisfactory method, but chiefly because there was no other way. A little later a few physicians took up the specialty of ophthalmology, and in the intervals between operating and treating diseased eyes they did a good deal of refraction work. Examinations by men whose time was in such constant demand were expensive, and the great majority of patients felt that they personally neither required such expert help nor could afford such fees except in case of absolute necessity. More and more they asked the advice of the optician who ground the glasses and who was glad to give gratuitous counsel.

The situation is not so very different today. We have a small class of expert oculists whose fees are large and a larger class of pseudoexperts charging expert fees, but the great mass of the people, whether from inclination or necessity, still constitute the jeweler or the optician their advisers. The optician, however, is not a professional man. He is a salesman of optical goods, whose success is made in direct proportion to his knowledge of human nature. Beyond that he often has only the most rudimentary knowledge of his business. Furthermore, the margin of profit is so enormous and the opportunity for fraud has rendered the field so attractive to the unscrupulous, that the opticians themselves in many States, including New York, recognized the necessity of having laws passed setting standards of character and knowledge.

Now, I am far from thinking that the licensing of the refracting optician was an unmixed evil. Whether it was good or bad the medical profession was certainly responsible for it in the sense that it was not prepared then, any more than it is today, to afford a good eye service except to the well-to-do. Laws of some kind were certainly necessary to protect not only the ignorant poor, but the ignorant rich. Unfortunately such laws protect the public only secondarily. Our present laws prescribing examining boards will, in the course of a generation or two, so raise the standard that a State license will have a real, if limited, value; but for the present at least it generally means no more than that the holder has been able to find reputable citizens willing to swear that he has a good moral character and was actually engaged in the business of selling glasses at the time the law was passed. The law was purposely constructed to exempt him from test of any kind.

There are doubtless exceptions, but for the most part the optician has had no training in the physiology or pathology of the eye, to say nothing of the human being behind the eye. He often has only the most rudimentary knowledge even of the optical part. There are many eyes which cannot be successfully measured without the use of drugs which he is especially forbidden to use. He may often overlook diseases of the eye itself or indications in the eye of diseases of other parts of the body and *vice versâ*, and from his inability to use drops in many cases the glasses he dispenses are often very incorrect. Now let us see whether his service, on the average inefficient, is really as cheap as it seems.

The one essential of the optician's success is advertising in one form or another, and the cost of this, of course, comes out of the customer; whether it takes the form of a handsome store or a quarter-column in the daily papers or the regular issuance of circulars, the cost must be added to that of the goods. But it pays. This is possible solely because of the popular misconception, both lay and medical, of the intrinsic value of the goods he sells. The old-time optician ground his own lenses. The optician of today may have his factory on the premises, but he rarely grinds anything but the edges of his lenses. He buys them wholesale at a few cents apiece, with the mountings as well, and often could no more make a pair of glasses than the seller of ready-made clothing could make a suit. But the factory girl who is persuaded that

gold is more becoming than steel, and solid gold a much better investment than filled, and that that particular optician is the originator of the only clip that fits her nose, is yielding a clear profit of perhaps 500 per cent. It is not important that the glasses be right so long as she thinks they are right, and as an indication of good faith the optician very often offers to exchange the lenses which cost him practically nothing in case she pays for the physician's examination and finds they are not right. Neither do the wealthy fare any better, for they often pay more for the simplest kind of glasses than the fee of an expert and the glasses together should cost.

The cure for this sort of thing is education. The public is beginning to realize that glasses, like most machine-made products, are really very inexpensive, and that their apparent cost is in effect the examination fee of the optician. Competition is already at work. Some opticians are already selling goods on a business basis, and they do not refract because at their prices it does not pay. Others are beginning to charge a small fee for the examination in lieu of an inordinate profit on the glasses.

But one thing is certain. The public must have eventually a service which it can afford and which it can trust, and one of two things must happen: Either the general practitioner must take it up or we must devise means for educating the younger generation of refracting opticians through a semimedical training like that of the modern dentist. It is highly desirable that the family physician should take up this work both for his own sake and that of his patients. It is becoming more and more evident that the body is not made up of independent organs which can be dissociated and treated by themselves. The eye, among the rest, and even more than most, affects, and is affected by, actual disease in distant organs, while its functional derangements sometimes proceed from other organs and are again the cause of malfunction elsewhere. Furthermore, the general practitioner cannot afford to abandon to the optician a field which means at first only the furnishing of glasses to those whose vision is defective, but finally will involve the primary treatment of many cases of headache, dizziness, nausea, and the like. The optometrists are already devoting themselves to the treatment of disease through the eye by an organized campaign of advertising of all sorts.

The general practitioner can readily make himself competent, because if he has graduated from any reasonably good school he already has the requisite foundation, and simply needs a little special training. Neither does he need a lot of special instruments. The specialist's office, of course, has a multiplicity of apparatus, some of which is designed to save time and much for use in exceptional cases. The man who has the proper equipment in his head can do his routine work with very few instruments. He can easily do better than the present optometrists, for he has a better foundation to begin with, can use cycloplegics when advisable, and, again, because he starts with the confidence of his patients. The average patient may often question in these days his physician's omniscience, but very rarely his honesty.

The field of the general practitioner is getting smaller and smaller as the number of preventable diseases and the competition of osteopaths, Christian

Scientists, and other irregulars augment, and his competition will probably increase rather than diminish. His average income is steadily falling, till it is said to be approaching that of the ministry. If he cannot make a living treating typhoid, malaria, and the epidemic diseases because, largely through his own efforts, the cases become too scarce, he must turn in other directions, and respond early rather than late to evident public demands. The general practitioner must be a good all-around man. He must know enough gynecology, for instance, to treat the average case, but he must also know enough to recognize and refer the extraordinary one if it is beyond his skill. There is a great and growing demand for the physical examination of school children, including their eyes, ears, noses, and throats, and every general practitioner ought to be able to do at least the routine work well. Every crossroads now supports its eye, ear, nose, and throat specialist who, unless the latter possesses more than the usual skill, is a living monument to the incapacity of the general practitioner in his neighborhood. The general practitioner may be a good man and the family adviser, but nobody thinks of consulting the family physician about his teeth. He goes first to the dentist, who is a mechanical specialist, and as a result we have the best teeth—and the poorest digestions—in the world. The same can be said of the eye, ear, and nose, which, after all, are integral parts of the body and not mere appendages.

The general practitioner does not have to advertise or have a handsome show window on the main street. If he simply pays some attention to the eyes of patients who come to see him for other conditions, he will soon find that he is doing quite a volume of extra work among his own patients; that he is not only remedying many purely visual imperfections, but that he is also relieving many physical symptoms which he used to overlook or treat unsuccessfully. Furthermore, he will find a distinct increase in his income.

It might seem at first sight that for the general practitioner to do the ordinary eye work would be contrary to the interests of the real specialist, but I do not think so. In the first place every community contains people who want the most expert help possible, no matter how expensive. The specialist already has those and will continue to have them.

There are two great classes of patients who have trouble with their eyes. The first class needs glasses simply to improve the sight, and comprises the majority of people. Fitting glasses for them is often a comparatively simple matter. Many of them can select their own glasses with perfect satisfaction. If he qualifies himself, the family physician can do as well by him as the specialist and much better than the present-day optometrist.

The second class contains the people with organic diseases affecting vision and the people who suffer from serious eye-strain. These patients cannot safely be left to the general practitioner, and still less to the optometrist. They frequently tax to the utmost the resources of the expert.

The general practitioner, in taking up this line of work, will rapidly develop an "eye sense." He will begin to notice abnormalities out of the ordinary routine,—squints, cataract still in the incipient stage, fundus changes due to general diseases, and a host of things at present neglected entirely

which, for the best interests of the patient and himself, demand expert help. The general practitioner who has been taught to see such things is one of the best assets of the specialist; but the ordinary conjunctivitis, the ordinary iritis, the general practitioner should be able to recognize and treat as successfully as the specialist. The discriminating general practitioner will develop better specialists, for many a so-called specialist has no qualifications beyond his office outfit and is incapable of doing really expert work in diagnosis or treatment, and especially in refraction.

Cyclopedia of Current Literature

ACETONURIA IN CHILDHOOD.

The acetone bodies—beta-oxybutyric acid, diacetic acid, and acetone—are known to be present occasionally in the urine of children, under the following circumstances: (1) in diseases in which gastrointestinal symptoms (diarrhea, vomiting, or constipation) are prominent, *e.g.*, in pneumonia, tuberculous meningitis, infantile diarrhea, etc.; (2) in cases of so-called "cyclical vomiting"; (3) in conditions in which fever is present; (4) in intoxications such as diabetic coma, postanesthetic poisoning, and salicylic acid poisoning. Upon examination of the urine of 662 children, after admission to the hospital, the author found that a temporary acetonuria frequently appeared, which bore no relation to any disease process present at the time. Careful inquiry into the cause of the disturbance disclosed the fact that it was due to altered diet. In cases where a change was made from the previous diet acetonuria resulted; in those in which no change, or but little change, was made acetonuria was comparatively rare. In the majority of cases, the author concludes, the carbohydrate starvation necessary for its production is caused by a temporary failure of digestion, brought about, in turn, by the change of diet. About three days are required before the digestive processes can accommodate themselves to the change. The younger the child, the more easily is acetonuria set up; the digestive instability becomes less marked as age advances.

Upon comparison of the percentages of cases in which acetonuria developed in various diseases, the author found marked uniformity in the incidence of acetonuria with the exception of typhoid fever, only 2 cases of which out of 13 (15.3 per cent.) showed acetonuria, whereas in the case of other diseases 60 per cent. or over showed this symptom. The author thinks this fact may be of use in the diagnosis of typhoid fever, which is often difficult in children, especially as Widal's reaction is frequently not positive until convalescence. R. S. Frew (Lancet, November 4, 1911).

ANEMIA OF TUBERCULOSIS, CITRATE OF IRON INJECTIONS IN THE SECONDARY.

Hypodermic administration of citrate of iron was found by the authors, in a series of 256 cases of pulmonary tuberculosis, to permit of controlling the secondary anemia in these patients with almost mathematical precision, as shown by repeated hemoglobin and erythrocyte estimations. In no single instance did

it fail to improve the quality of the blood at least to some degree, though 70 per cent. of the cases were in the advanced and far-advanced classes. The measure was employed routinely in all cases showing a reduction of 10 per cent. or more in the hemoglobin content. The amount of the citrate of iron given at each injection, according to the authors, should not exceed 0.05 Gm. (⅚ grain). Larger doses may induce sudden vomiting. In most cases it required but 30 or 40 consecutive daily doses to attain the greatest amount of benefit possible in the given patient. In all cases in which the patient might be considered to be doing well, or in which the *status quo* was seemingly maintained, the hemoglobin was raised to normal. The ordinary hypodermic syringe and needle were employed, and the injections given in the buttock. Preparations of iron from Italian pharmaceutical houses were used and are preferred by the authors, who found them to be, in general, far less irritating locally than those manufactured in this country. E. S. Bullock and L. S. Peters (Journal of the American Medical Association, October 28, 1911).

APPENDICITIS, CHRONIC, AND ITS TREATMENT.

In the experience of the author appendicial dyspepsia has been characterized by symptoms strikingly analogous to the earliest symptoms of acute appendicitis, viz., attacks of epigastric or midabdominal pain or distress, but only rarely accompanied by subjective symptoms referable to the region of the appendix. During these attacks the pain or distress was nearly always increased by food intake.

Pain confined chiefly to the right lower quadrant and not associated with attacks of epigastric pain and nausea is seldom due to the appendix, and before making a diagnosis of chronic appendicitis in these cases every other possible condition should be excluded.

The end-results in cases operated for supposed chronic appendicitis have not thus far been altogether satisfactory, a considerable number of patients who have had their appendices removed for this condition showing no improvement in symptoms. The majority of failures in the 100 cases operated under the clinical diagnosis of chronic appendicitis by the author and his associate, Dr. G. C. McMullen, were in patients complaining of right inguinal pain associated with chronic constipation. At operation these patients presented an unusually long or dilated cecum, usually accompanied by other evidences of enteroptosis. In the future a certain proportion of these patients may be cured, in the author's opinion, by some such operation as that advocated by Wilms, but appendectomy alone does not cure.

Unless the diagnosis is absolutely certain the gall-bladder, stomach, and right kidney should be explored, and the possibility of a Lane kink excluded in all cases operated for chronic appendicitis. E. McD. Stanton (New York State Journal of Medicine, October, 1911).

BRONCHIAL ASTHMA AND CONSTIPATION.

From numerous clinical observations the author is led to conclude that bronchial asthma is frequently dependent upon enterogenous autointoxication. He succeeded in bringing about a permanent cure in cases of this type by combating the chronic coprostasis present, and recommends that particular attention be paid to regulation of this eliminatory function in all cases of asthma. By way of illustration he cites the case of a boy 8 years old who had long been subject to

asthmatic attacks. Though defecation occurred regularly every day, examination revealed the presence of a large amount of hardened residual material in the large intestine. Injections of oil were given to clear out the bowel, and the asthmatic paroxysms thereupon ceased and have not reappeared. Similarly, in a woman of 42 subject to violent asthmatic attacks the latter disappeared when her chronic constipation was relieved. They reappeared nine years later, again in association with chronic constipation, but ceased when the bowel functions were re-established. W. Ebstein (Deutsche medizinische Wochenschrift, October 19, 1911).

CATARRH, POSTNASAL, IN CHILDREN.

Upon examination of the fauces of children suffering from loss of appetite, gastric derangements, spasmodic conditions of the air tubes, and obstinate coughs, the author found a postnasal catarrh to be present in a large number of instances. In his paper he gives an admirable description of this condition and of the various disturbances secondarily resulting from it. The catarrh is often confined, he says, strictly to the nasopharynx. It may give rise to none of the usual signs of a "cold," and escape notice for weeks or even months. Upon inspection the fauces vary in appearance according to the intensity and duration of the process. The posterior pharyngeal wall shows more or less thickening and reddening and is often uneven from shallow projections of the surface. It is moist and is frequently covered with thick yellowish mucus, which may be seen flowing down from above. In bad cases enormous quantities of this mucus may be secreted, and, as it is all swallowed, it easily sets up gastric irritation. Bacteriologic examination of it shows a great excess of the *Micrococcus catarrhalis*, mixed, in the various specimens, with Friedländer's bacillus, the *Bacillus septus*, and more or less numerous staphylococci. Sometimes the uvula and soft palate are thick-looking and congested, but the tonsils are not necessarily enlarged.

One of the commonest consequences of this persistent postnasal catarrh is complete loss of appetite for solid food, though fluids, such as milk, may be taken readily enough, and deficiencies of nutrition, therefore, not be very apparent. In some cases there may in addition be periodical attacks of gastric disturbance, —among them not a few examples of the so-called "cyclical vomiting." The child every month or six weeks is taken more or less suddenly with an attack of vomiting, accompanied by fever, probably due to an acute exacerbation of the catarrh, with swallowing of acrid, foul secretions and the setting up of septic fermentation in the alimentary canal. Such septic infections may also be the cause of serious inflammation in distant tissues, including meningitis, appendicitis, otitis, iritis, retinitis, and perhaps poliomyelitis.

The postnasal irritation is also a common cause of spasms of the air passages (stridulous laryngitis and laryngismus stridulus), as well as of general convulsive attacks. In children less than 2 years old and those of neurotic tendencies who have passed that age, rapid rises of temperature with early and correspondingly rapid fall may be induced, especially toward the end of digestion, a couple of hours or so after food.

Acute enlargement of the cervical glands is another common consequence of postnasal catarrh.

The production of otitis through extension of the trouble by the Eustachian tube is well recognized. By spreading

downward, on the other hand, the process may induce laryngeal and tracheal irritation. The child becomes subject to attacks of violent cough, which may come on at any time, but are especially liable to occur at night. The attacks may last twenty or thirty minutes, and end in vomiting efforts in which a large quantity of mucus is brought up. Such attacks may in some cases be mistaken for whooping-cough.

In the treatment of these various disturbances the condition of the throat, to which they all owe their origin, must be promptly remedied. The local treatment may take the form of drops instilled into the nostrils and allowed to trickle down into the nasopharynx, or remedies applied directly to the fauces with a throat-brush. If the catarrh be very acute, the throat should be painted several times daily with boroglyceride, or, in older children, sprayed with a weak solution of tartrated antimony in water (gr. ¼ to the ounce) while the patient inspires deeply. Later the paint may be made more astringent by combining with the boroglyceride an equal amount of glycerite of tannin. Where the painting cannot be carried out owing to the resistance of the patient, a useful though inferior substitute for it is to instill some drops of a mild antiseptic solution into the nostril several times a day as the child lies on his back with his head supported by a pillow. A solution of resorcin in normal saline (5 to 10 grains to the ounce), or of boric acid (10 grains to the ounce of water), or of sodium bicarbonate (15 grains to the ounce) may be used, or any other weak antiseptic which is not injurious to the stomach when swallowed. As the redness of the pharynx fades stronger applications may be employed, *e.g.*, pure glycerite of tannin, or a paint made of 12 grains of iodine and 15 grains of potassium iodide to the ounce of glycerin, flavored with 5 drops of oil of cinnamon or peppermint. A good astringent iron paint is made by adding 1 dram of the stronger perchloride of iron solution to the ounce of glycerin, but this should be used only after all trace of redness has disappeared, when it is very efficient. In cases with complete anorexia the appetite usually returns when the flow of mucus into the stomach has been stopped. If not, the symptom rarely resists a good iron tonic, especially if this be combined with a stay in the country or at the seaside.

Other consequences of the catarrh quickly disappear upon energetic treatment of the throat. During the period of recovery and for some time after special care should be taken to keep the child adequately protected from cold, in order to avoid recurrence of the catarrhal trouble. Eustace Smith (Lancet, October 28, 1911).

CHOLERA, TREATMENT OF.

Potassium permanganate and tincture of iodine were used by the author in cholera Asiatica with some degree of success. The former was employed for its oxidizing, antiseptic, and astringent properties, and was administered in the dosage of 0.4 to 0.5 Gm. (6 to 7½ grains) per diem. This amount was simply dissolved in 400 to 500 Gm. of pure water and given to the patient in a large spoonful every half-hour. A few hours after starting the drug the subjects were considerably better. Vomiting, diarrhea, and cramps progressively diminished and later tended to disappear, the pulse became regular, and on the next day a reaction occurred, with sweating and diuresis. The drug was continued for two or three days more in diminishing doses. It acted particularly well,

according to the author, in cases where hemorrhage was present as a complication. Forty-eight of the cases receiving potassium permanganate recovered, though the author does not state the total number of those thus treated.

Tincture of iodine was used in a series of 42 cases, of which 34 recovered. It was given in daily doses of 40 to 60 minims, dissolved in 250 Gm. of distilled water, a small coffeecupful of the solution being given every hour. Improvement in the general condition and special symptoms was observed much as in the cases treated with permanganate. Certain exceptionally violent cases required, in addition to the iodine tincture by the mouth, copious bowel irrigations. These were administered either with warm iodine solution or 1:1000 potassium permanganate solution, and were productive of good results. J. Logotheti (Bulletin médical, December 6, 1911).

ECLAMPSIA, THE BLOOD-PRESSURE INDEX OF.

Triweekly blood-pressure examinations, combined with the regular urine examinations for albumin and casts, offer the best safeguard, according to the studies of the author, against the unexpected occurrence of this affection. The average blood-pressure in the last weeks of pregnancy is 118 mm. Hg. Fluctuations amounting to 30 mm. Hg above this need cause no alarm. Blood-pressure over 150, however, should be thoroughly investigated at once.

The blood-pressure in eclampsia with convulsions, though usually in the neighborhood of 200 mm. Hg, may be as low as 155 mm. Convulsions do not occur when the blood-pressure is lowered by poor resistance, as in the so-called fulminant cases, or when lowered by veratrum viride or other drugs producing collapse.

Treatment should be directed not toward reducing the blood-pressure, but to removal of the toxemia, for the rise of blood-pressure may denote only the resistance of the system toward the toxins. H. C. Bailey (Surgery, Gynecology and Obstetrics, November, 1911).

EMPYEMA IN YOUNG CHILDREN, TREATMENT OF.

The author describes a method of instituting drainage in empyema which has proven convenient and effective in his hands: The pus having been located with the aspirating needle, a narrow-bladed knife is inserted into the pleural cavity, along the lower side of the needle, and the wound enlarged along the upper border of the rib just sufficiently to admit snugly a rubber drainage tube, which is inserted at once. The tube is of rather stiff rubber, $\frac{3}{16}$ inch in inside diameter, with a window near the end, and a short section of slightly larger tubing slipped over it as cuff, leaving about 1 to 1½ inches of the smaller tube protruding—just enough to penetrate the chest wall. A piece of tape with a hole in its center is threaded over the tube down to the cuff, over which it will not slip, and fastened to the chest with strips of adhesive plaster about 2 inches from the wound. The application of gauze pads split so as to surround the tube and fastened with adhesive plaster completes the dressing.

The rubber tube is connected to a bottle of about one-pint capacity, suspended under the bed or resting on the floor. The bottle is one-quarter to one-third full of warm sterile salt solution and has through its stopper two pieces of glass tubing, one short and one reaching nearly to the bottom. The rubber

tube from the chest, previously protected at its end by sterile gauze to exclude outside infection and clamped to prevent pneumothorax, is connected with the longer of the glass tubes.

After putting fresh salt solution in the bottle it is raised to the level of the chest or higher and tilted over so that the solution slowly runs into the pleural cavity. It is then lowered and the fluid mixed with pleural exudate flows back into it. The patient's respiratory movements often suffice to cause an in and out flow and thus bring about automatic irrigation. The salt solution is changed two or three times daily or as often as necessary to keep it fairly clean. Unless the tube becomes plugged neither tube nor dressing have to be changed for three or four days.

The advantages claimed for this plan are simplicity, absence of shock, infrequent dressings required, avoidance of mixed infection, shortened convalescence, greater comfort to the patient, and very efficient drainage. The method was employed with success on babies only three months old. J. H. Kenyon (Medical Record, October 21, 1911).

GONORRHEAL ARTHRITIS, TREATMENT OF.

Injections of tincture of iodine have been given by the author in a large number of cases of gonococcic joint involvement in its various forms, with considerable success. At first the joint becomes swollen, but this soon disappears, and no further effusion of fluid into the joint occurs. In a few days the pain is gone and motion of the joint returns. The cure obtained with iodine does not necessitate adhesions or atrophy of the synovial membrane. Care should be taken, however, not to inject excessive amounts of iodine, as instances of systemic intoxication or even death have already been recorded succeeding injections of, *e.g.*, 5 Gm. of iodine in joint inflammations with suppuration. The dose injected by the author is, on an average, 5 Gm. of the *tincture* of iodine. O. Hildebrand (Berliner klinische Wochenschrift, July 31, 1911).

GONORRHEA, TREATMENT OF ACUTE.

A more vigorous plan of treatment than that usually employed is advocated by the author. The urethra is to be treated every half-hour in the daytime and every hour at night with a 0.25 per cent. solution of protargol, the purpose being to prevent the inflammation from extending to the deeper portion of the urethra and to prevent entirely the accumulation of pus. The solution is injected to the amount of 5 to 15 c.c. (1¼ to 4 drams) and retained two to ten minutes. The strength of the solution should gradually be increased as the urethra becomes less sensitive; at no time should it be used strong enough to cause burning. While the solution is in the urethra the latter should be gently massaged from behind forward.

The patient should urinate before each injection, and as the injections are given so frequently it is necessary that an unusual amount of urine be available. This is brought about by having the patient ingest large amounts of fluid,—4 or 5 quarts daily at least.

With this plan of treatment, suppuration entirely ceases within three to five days. The injections should be continued, however, and given as frequently as possible, for two or three weeks longer. The protargol may then be alternated with lead acetate and zinc sulphate, of each, 0.3 Gm. (2 grains) in 200 Gm. (4⅔ ounces) of water. Kuhn (Mün-

chener medizinische Wochenschrift, September 3, 1911).

HEPATIC AFFECTIONS, DRUGS USED IN THE TREATMENT OF.

The action of and indications for certain remedies modifying the biliary function are dealt with by the author, who reaches the following conclusions on the basis of experimental as well as clinical observations:—

Sodium salicylate causes a flow of bile which is of abnormal concentration, and is indicated as a cholagogue in hepatic affections. Sodium benzoate, on the other hand, while increasing the output of bile, lowers its density. Its use is justified in cases where it is desired mechanically to wash out the liver, more particularly in suppurative affections of this organ, angiocholitis, cholecystitis, and lithiasis. The benzoate and salicylate of sodium may be given in combination, the respective amounts used varying according to the effects required in the given case.

The following is suggested as a formula: Sodium benzoate, 0.75 Gm. (12 grains); sodium salicylate, 0.50 Gm. (8 grains); sodium borate, 0.25 Gm. (4 grains); rhubarb, 0.30 Gm. (5 grains). This represents a single dose, and is to be taken three times a day. In severe cases the daily amount of sodium benzoate taken may be carried up to 5 Gm. (75 grains), as this substance is but slightly toxic.

Bile itself, which increases both the amount and the consistency of the biliary secretion, is the best of the cholagogues. It is, in addition, a bitter and stomachic. The preparations in general use are oxgall, bile extract, and powdered bile. The bile-salts, almost as active as the whole bile, act more strongly than sodium salicylate. The most useful are the glycocholate and taurocholate of sodium, and especially the crystallized bile of Plattner.

Water and normal saline solution can hardly be said to act on the biliary secretion. They are, nevertheless, valuable, in the form of cold injections, in cases of catarrhal jaundice (Garnier), in cholemia (Lereboullet), and in infective states of the liver. By promoting peristalsis this measure indirectly favors the excretion of bile.

Peptone and adrenalin diminish and may even entirely arrest the flow of bile. They should be used with extreme caution in cases of jaundice, hepatic congestion, and infections of the biliary tract. Alcohol likewise seems to be prejudicial to the liver; it should, therefore, be forbidden to patients suffering from affections of this organ.

Finally, aloes, in spite of its reputation as a cholagogue purgative, lessens the amount and concentration of the bile. It may, however, relieve hepatic congestion when combined with calomel and gamboge. Rendu recommends calomel and aloes, of each, 0.05 Gm. (¾ grain), and gamboge (⅓ grain), given in a pill every morning on several consecutive days. Aloes may also be resorted to in checking gastrointestinal catarrh, a constant accompaniment of hepatic affections. When required the derivative action of this drug may also be availed of. M. Polain-Cartier (Le Scalpel et Liége médical; Revue de Thérapeutique médico-chirurgicale, October 1, 1911).

HIP-JOINT, TREATMENT OF CONGENITAL DISLOCATION OF.

A plea for the early apprehension and treatment of this condition is made by the author, who reports in tabular form the results obtained by the manipulative method in a series of 33 cases. He is an

advocate of the routine employment of this method, supplemented, in some of the older cases, by preliminary traction by weight or other apparatus, or, in unsuccessful or recurrent cases, by exploratory operation to discover the cause of non-success. Treatment by manipulation at the earliest possible time after infancy may be expected to yield a stable articulation with perfect function in 60 to 70 per cent. of cases. A slight limp (due to imperfect growth of the bones) and some slight limitation of movement may remain, but the children are cured of any obvious deformity or incapacity. In the remaining 35 to 40 per cent. the condition is usually much improved by treatment.

The treatment in children below 8 years of age is attended by little or no danger and by few unfavorable accidents. The trouble caused to the parents is slight, and the loss of school attendance in early childhood is but of small importance. In children between 9 and 12 years of age treatment by manipulation has greater dangers and inconveniences and gives much less favorable results. It should, however, be tried in all cases which have unfortunately reached this age with the condition unremedied; great care and gradual reduction to avoid the dangers of shock and laceration are required, but considerable improvement is usually effected. G. C. E. Simpson (Lancet, October 21, 1911).

HYPERTHYROIDISM, ELEVATION OF TEMPERATURE IN.

Elevation of temperature was found by the author to be one of the early, if not the earliest, objective symptom in many instances of hyperthyroidism. It seems, he states, to be a much more constant manifestation in the mild than in the more pronounced cases. The rise of mouth temperature ranges from a fraction of a degree to 2° or even 3° F. In some cases the temperature fluctuates, with occasional intermissions, between 99° and 99.4° for months and even years; in others, the slightest exertion or excitement drives it up from 99° to 100° or thereabouts. In most instances the temperature is lowest after a night's rest; continued rest in bed will occasionally reduce it to normal for a brief period. The usual discrepancy of about 0.5° F. between the mouth and rectal temperatures is in some cases diminished or absent.

From a careful study of cases of this type, the author has been led to formulate definitely the following conclusion, viz., that elevation of temperature is a thyrotoxic phenomenon when, in the absence of acute or other tangible disease, there has been loss of body weight and augmented nitrogen and phosphoric acid excretion, and when, after administration of a thyroid or iodine preparation, there supervenes or is accentuated a train of psychoneurotic and cardiac symptoms pathognomonic of well-established hyperthyroidism.

Hysterical pyrexia, the presence of which might suggest itself to the physician in the cases of mild hyperthyroidism referred to, is to be differentiated from thyrotoxic pyrexia mainly by the usual absence of physical decline and emaciation, the low urea and phosphoric acid quotient, and the fact that it is usually not influenced by preparations of thyroid or iodine. In the "therapeutic test" of these cases the author gives dried thyroid, 0.15 Gm. (2¼ grains) three times a day, or potassium iodide, gtt. x to xx (0.6 to 1.2 c.c.) of a 50 per cent. solution three times a day, for from two to four days. The drug should be at

once discontinued on the appearance of thyrotoxic symptoms.

An illustrative case is reported in full. In this patient, a woman, the temperature was occasionally normal after a night's rest; most of the time, however, it was slightly above 99° F. in the morning; four or five hours afterward it usually had reached 100°. Occasionally it would climb to 101° or even 101.5°, especially after excitement. The administration, for diagnostic purposes, of thyroid and its modifiers, adrenals and sodium cacodylate, aggravated the physical and nervous state of the patient; the temperature remained around 101° F. for nearly three days; there ensued a piercing right-sided headache, dyspnea, a dry cough, and diarrhea. Discontinuance of the thyroid was followed by abatement of these phenomena after about two days. The patient was then treated for hyperthyroidism with fairly good results. A slight, more or less intermittent, temperature elevation, however, persisted. Heinrich Stern (Archives of Diagnosis, July, 1911).

HYPOTHYROIDISM, THE BLOOD IN.

In the course of a study of the blood in nervous diseases, the authors made observations on two cases of hypothyroidism which led them to make certain definite statements concerning the blood alterations in this condition. Although, they say, the subject of blood changes due to various hyperglandular and hypoglandular functions is by no means firmly established, there is a tendency, as has been pointed out by Pincus and recently by Kocher, for the blood to respond in a more or less specific manner to disturbed functions of the ductless glands. The gland receiving the most attention is the thyroid. The hypofunctionating gland not only expresses itself in obesity, cretinism, and myxedema, but there are many other changes. Blood that shows a mild leucocytosis and a relative lymphocytosis with eosinophilia ranging from 3 per cent. up should be regarded as highly suggestive of a hypothyroid state.

The cases reported by the authors in illustration of this fact were in brothers, 11 and 7 years old respectively. The elder's chief symptom was inability to talk distinctly. His hands trembled, he tired easily, ate a great deal, and never perspired. His intelligence corresponded with the average. The gait was waddling, there was distinct scoliosis, the tendon-jerks were absent, and the boy was fat. The thyroid gland could not be palpated. The differential leucocyte count showed 13 per cent. of eosinophiles and a relative lymphocytosis.

The younger patient had had an attack of measles in his second year, during which he suddenly lost the power of speech, though he was still able to cry. When 4 years old he began to talk again, but it was remarked that the right extremities were weaker than the left. There were mental retardation and night terrors. The blood showed 4 per cent. of eosinophiles.

The marked improvement that followed the administration of thyroid substance in these cases led the authors to look upon them as cases of hypothyroidism, though to what extent one child showed more of a hypofunctionating clinical picture than the other was not ascertainable in the light of present knowledge. Joseph Collins and D. M. Kaplan (American Journal of the Medical Sciences, November, 1911).

ILEOCECAL ADHESIONS.

Kinks in the lower ileum ("Lane's kink") and membranous pericolitis are

common in cases presenting symptoms of chronic appendicitis. Removal of these conditions has been followed by permanent relief in some cases in which appendectomy was not followed by improvement. They should always be looked for, in the author's opinion, while operating for chronic appendicitis, though a large incision will be necessary to permit of this.

They are probably not of inflammatory origin, but due to ptosis of the cecum. When present they should be removed or corrected, and an effort made to keep the cecum up and out of the pelvis. It is not to be expected that this will relieve all such cases, but from a review of the literature and personal experience the author is led to believe that, when liberal abdominal incisions and correction of these conditions are more common, the remote results after operation for chronic appendicitis may be improved. F. Gregory Connell (Surgery, Gynecology and Obstetrics, November, 1911).

MASTOIDITIS, ATYPICAL.

The author believes that the atypical mastoid disease is far more common than is ordinarily supposed, and occurs by reason of an abnormal type of mastoid bone rather than from any other etiological factor. He states that the necessity for early recognition of this condition is very important, owing to the greater possibility of intracranial complications, thrombosis of the lateral sinus, and general septicemia occurring than in more decided cases. The external manifestations of mastoid involvement depend to a great extent upon the grade of infection and the type of the temporal bone. A small mastoid process with a thick outer cortex showing numerous diploic cells and a small antrum may not afford any external evidence in the way of tenderness, redness, or edema, and may escape detection by the practitioner long enough to permit the development of a general osteomyelitis outside of the temporal bone, or a sudden attack of leptomeningitis, or a thrombosis with a fatal termination. The rarity of a hard cortex in children usually precludes the existence of atypical mastoiditis; in consequence of this intracranial complications from an acute mastoid infection rarely develop.

The symptoms in the adult which should arouse suspicion are the persistent or profuse discharge from the ear—more profuse than could be readily expected from the middle ear alone, and continuing profuse for two or three weeks—and the presence of an increased swelling of the posterosuperior wall of the external auditory canal. These two symptoms indicate almost to a certainty the existence of mastoid disease.

It is the opinion of the author that elevation of temperature, chills, sweating, and leucocytosis, with a high polymorphonuclear count, are all late symptoms, and that the diagnosis should be made before their development. He has been afforded great assistance by the X-ray in arriving at an early diagnosis, and cites several cases in which the latter would have been practically impossible without the knowledge obtained by the skiagraph. E. A. Crockett (Laryngoscope, July, 1911). RUFUS B. SCARLETT.

MENINGITIS, PRIMARY TYPHOIDAL.

The authors report the case of a pregnant woman who came under observation presenting a complete array of meningitic symptoms: headache, stiffness in the region of the neck, backache, temperature of 38.5° C. (101.3° F.), vomiting exceeding in frequency that of early pregnancy, herpetic lesions around

the mouth and on one buttock. Meningococcic cerebrospinal meningitis seemed likely, but cultures made from the blood and cerebrospinal fluid yielded a pure growth of typhoid bacilli. The condition present thus revealed itself as a primary typhoidal meningitis unaccompanied by typhoid fever. The course of the affection proved rapid and mild. Points of especial interest in the case were the presence of typhoid organisms in the cerebrospinal fluid and the positive agglutination test obtained with the latter. Berger and Weissenbach (Société médicale des hôpitaux, Paris; Progrès médical, November 11, 1911).

MIDDLE-EAR AND MASTOID INFLAMMATIONS, TREATMENT OF ACUTE.

Upon close observation of acute pharyngeal, nasal sinus, middle-ear, and mastoid inflammations the author has become convinced of the existence of an invariable relation between those inflammations and what he calls an "active autotoxic state" of the system, evidenced by continued digestive disturbances and recurring head colds. He brings out the importance of applying in these cases not only the now well-perfected methods of local treatment, surgical or otherwise, but additional measures intended to stimulate the defensive powers of the body as a whole, in order to render it an unfavorable soil for the propagation of pathogenic bacteria. He relies most upon mercury, given by the mouth in some form, as a constitutional remedy. Mercury, he says, properly given, appears to act as an antigen, stimulating the formation of antibodies to ward off and subdue disease. He prescribes calomel in $\frac{1}{10}$-grain (0.006 Gm.) doses, frequently repeated until 1 grain or $1\frac{1}{2}$ grains have been given. Then, after making sure that the bowels are sufficiently active, he follows the calomel with a dose of castor oil or salines. This plan is repeated every second day until the active symptoms are subsiding. During convalescence, following either the internal or external mastoid operation, he gives calomel in good dosage at least every five days. By attacking the cause of acute mastoiditis as promptly and thoroughly as the effect through mercurial constitutional treatment, recovery occurs, he finds, in less than one-half the time and with one-third the effort required under the ordinary plan of using practically only local treatment. S. F. Snow (Lancet, October 14, 1911).

MUCOUS COLITIS, TREATMENT OF.

In mucous colitis the author recommends the application to the abdomen at night of a magnesium sulphate compress. A half-ounce of the salt is dissolved in a pint of water at about 75° F. (24° C.). A towel is then soaked in this solution, the excess pressed out, the towel applied in four thicknesses so as to cover the abdomen and flanks, and a retentive binder put on.

For rectal irrigation he also uses a magnesium sulphate solution, 1 dram to the pint of water at 85° to 90° F. (29.5° to 32° C.), administered by means of a Kemp tube or by alternately filling and emptying the bowel by small enemata. With either method about 2 gallons of fluid are necessary. After a few treatments mucus disappears, pain and gaseous formation diminish, and comfort is noted almost immediately.

Another effective measure in mucous colitis is a milk diet. Allowing fruit, especially grapes, enhances its value. If the diet becomes too monotonous some cereal may be added, but the results are not as good. From ten days to three

weeks is the course of the milk-diet treatment. One quart and a half of milk (exclusive or inclusive of buttermilk) is to be taken during the day and a pint of hot (not boiled) milk before bedtime.

The crude tar of *Pinus palustris,* administered internally, as recommended by Wark, has given the author good results. The tar is mixed with an equal weight of wheaten flour as an excipient and ordered put up in No. 2 gelatin capsules, of which the patient takes two or three one hour after meals. This measure should not be used for any length of time where Bright's disease exists.

The author refers to a "summer colitis" he has observed, which seems to be due directly to the drinking of iced fluids, as mere prohibition of cold drinks leads to marked improvement in most cases. The remedial measures already mentioned are also suitable in this disorder. B. Joseph (Vermont Medical Monthly, October, 1911).

NASAL LOTION, A COLLUNARIUM OR.

The author explains at length the various properties which a good nasal douching fluid should possess and formulates the following combination as meeting the requirements best: Chloride of sodium, 6 drams (24 Gm.); sulphate of sodium and phosphate of sodium, of each, 2 drams (8 Gm.); white sugar, enough to make 3 ounces (90 Gm.). This is to be dissolved in 6 ounces (180 c.c.) of water and 3 grains (0.2 Gm.) each of thymol and of menthol added. For use two teaspoonfuls of this are diluted with warm water (about 90° F.) to half a tumblerful.

When a preparation is required in the form of a powder, the following combination is recommended, though it does not make so bland a lotion as the other: Chloride of sodium, 5 drams (20 Gm.); sulphate of sodium, 4 drams (16 Gm.); bicarbonate of sodium, 2 drams (8 Gm.); white sugar, enough to make 3 ounces (90 Gm.). A level teaspoonful of this powder is to be dissolved in half a tumblerful of warm water for use.

The addition of antiseptics to a nasal lotion in sufficient strength to be efficient is contraindicated, as they give rise to intense irritation. An exception to this may be made, however, in atrophic rhinitis, when antiseptics have a limited applicability.

In using the lotions no special appliance to wash out the nose, nasopharynx, etc., is necessary, except where there are crusts of dried secretion difficult to remove. As a rule, the patient should simply immerse the nostrils in the lotion contained in a tumbler, which is then inclined toward the horizontal. The liquid is drawn up through the nose and, after a little practice, will flow through it easily and reach the larynx, which is instantly closed against its further progress in that direction. It is then passed out by the mouth. Often it is not necessary to draw the lotion through, but rather to wash out the front part of the nasal cavity by short out-and-in respiratory movements. The patient should be instructed not to blow the nose afterward, or indeed at any time, by closing both nostrils, owing to the probability of forcing infective material into the Eustachian tubes.

Crusts of dried secretion are more easily detached by stopping up the nose with cotton-wool plugs or packing the nasal cavity with strips of gauze soaked in liquid paraffin for half an hour or more. A spray of hydrogen peroxide yielding 10 volumes of oxygen, sometimes used for the same purpose, produces temporary irritation. After removing

the plugs the crusts are more easily detached if the lotion is directed through one side of the nose at a time by means of a rubber-ball syringe or a Higginson syringe with a cone-shaped rubber tube fitted on the end-piece. Wilfrid Glegg (Practitioner, November, 1911).

PERNICIOUS ANEMIA, INJECTIONS OF DEFIBRINATED BLOOD IN.

A case of pernicious anemia in a pregnant woman at term is reported by the author in which four intragluteal injections of defibrinated human blood, amounting altogether to 159 c.c., proved markedly beneficial. Though, of course, it cannot be asserted that a cure was obtained in view of the frequent spontaneous remissions in this type of anemia, the results seemed to warrant the recommendation of the above measure as a simple and painless method of treatment. Esch (Deutsche medizinische Wochenschrift, October 19, 1911).

PITUITARY EXTRACT AFTER ABDOMINAL OPERATIONS.

The author employed this drug in 21 unselected laparotomy cases. In 2 cases the dose given was ½ c.c. (8 minims), commenced twelve hours after the operation and given every four hours for three days. In the other cases the dose was increased to 1 c.c. (16 minims) for adults; it was commenced about six hours after operation and repeated every four hours until 18 doses had been given.

From the results of the injections the author considers it evident that pituitary extract has a very marked effect upon the muscular coats of the bowel, and that it is able to overcome the temporary paralysis due to their exposure at the time of operation. This is shown by the early passage of flatus and absence of abdominal discomfort. In only 3 cases did the bowels act without the assistance of an enema, but in every case except 2 a satisfactory action of the bowels was obtained after a simple enema, and it was unnecessary to give any aperient by the mouth. All the patients passed flatus freely within a few hours of the first injection, and were free from any abdominal pain or distention. The pulse rate remained much lower than usual, and after some of the severest operations it did not exceed 80 per minute. Except in the last 2 cases no patient suffered from postoperative retention of urine, and so catheterization was unnecessary.

The patients treated with injections of pituitary extract after operations are more generally comfortable, the author states, than those who do not receive them. He does not consider, however, that the drug can be relied on completely to empty the bowels without the assistance of enemata, and, therefore, does not think it need be employed after the first twenty-four hours. He recommends 3 injections of 1 c.c. each during the first twenty-four hours as a routine practice after laparotomy. They must be made into a muscle, subcutaneous injections causing pain. The first should be given six hours after operation and the other two at six-hour intervals. No further injections need be given unless there is distention. Suppuration at the site of injection (into the biceps) was the only unpleasant symptom the author witnessed. No general symptoms were ever produced. L. A. Bidwell (Clinical Journal, September 6, 1911).

PLACENTA PRÆVIA, TREATMENT OF.

The danger attending operative delivery, owing to the marked friability of the lower uterine segment in these cases, is emphasized by the author. The first essential is, of course, to arrest the

hemorrhage, and this result should be attained even if an operation is necessary for its accomplishment; but this end having been secured, it is important that delivery be effected without haste and without force. If an inflatable bag has been inserted or version performed, the bag or the fetal breech may be gently pressed against the lower uterine segment, but spontaneous expulsion of the fetus should then be patiently awaited. Instrumental dilatation is, in his opinion, contraindicated, and even manual dilatation has been known to induce fatal laceration of the cervix.

The author insists on absolute quiet, rupture of the membranes when required, and irrigation with hot water, 45° to 48° C. (113° to 118° F.), at least 7 or 8 liters of water being used. The water must be at this temperature and used freely; otherwise, hemorrhage will be favored instead of arrested. Where necessary the irrigation should be repeated until the hemorrhage has been checked. By this method the woman is not exposed to infection as she is with the tampon, nor to mishaps such as may occur when version is performed and a bag introduced. The membranes remaining intact, the life of the child is also less exposed. Seventy cases have been treated by the author without any deaths. R. de Bovis (Semaine médicale, September 6, 1911).

PLAGUE, TREATMENT OF BUBONIC.

Experience gained by the author in the treatment of 62 cases of the bubonic form of plague in Lucknow, India, showed that early incision into a plague gland produces an immediate improvement in the patient's condition. The temperature is lowered and the severe headache alleviated, and if the patient is seen during the first twenty-four hours the probability of his recovery is great. The theoretical objection to incision is that the gland forms a barrier between the bacilli and the general circulation, any disturbance to this barrier being, therefore, dangerous. The author adduces evidence, however, to show that the plague bacilli in the ordinary course of the disease reach the lymphatic glands from the blood and do not, as generally believed, on the contrary enter the bloodstream after having been temporarily arrested in the glands draining the area of inoculation in the skin. Just as an acute attack of osteomyelitis can be cut short and the bone saved by early excision of the periosteum and opening of the medullary cavity, he argues, so can a gland in the earliest stages of plague involvement be opened without fear of producing a septicemia. The author also protests against the teaching that the disease is an extensive polyglandular one —a teaching which tends to make the physician feel that all attempts at treatment are futile. He has never seen involvement of the deep lymph-nodes in these cases.

In carrying out this method of treatment, the skin was cocainized, freely incised, and the swollen gland or glands then laid well open by crucial incisions. The gland and subcutaneous tissues were not disturbed except for the clean-cut incisions. The wounds were dressed with absorbent wool wrung out of iodine lotion (1 dram to the ounce of water), oil-paper, a layer of perchloride wool, and a bandage. The incision not only liberates toxins and bacteria, but also produces a flow of serum, lymph, and leucocytes containing immune bodies, alexin, and opsonins, the significance of which lies in the fact that, while bacteria were never once found inside leucocytes in smears taken from the glands, leucocytes are

known to take up readily the plague organism in the presence of serum from a patient. The bacilli are, therefore, not only destroyed directly after the incision into the gland, but are also engulfed by phagocytes.

Of the 62 cases treated by the author in this way 54 recovered, giving a mortality of only 15.3 per cent. V. B. Nesfield (Lancet, November 4, 1911).

PNEUMOTHORAX, A CLINICAL STUDY OF.

From a detailed study of 44 cases of pneumothorax occurring in the course of pulmonary tuberculosis, the author is led to the final conclusion that this condition occurs in from 5 to 10 per cent. of all cases of phthisis. It occurs more frequently in men than in women and is seen oftenest between the ages of 20 and 40, at the time when phthisis is most fatal.

It probably occurs with equal frequency on the two sides of the chest. The patient may assume any decubitus. Without reference to the side affected he chooses the position in which he has the greatest comfort. In the majority of cases the percussion note is hyperresonant, although tympany, dullness, or resonance may be found. The breath sounds are usually absent or distant. The distant breath sounds may have any quality. In some few cases amphoric or cavernous breathing may be heard. The most diagnostic signs of the condition are the coin test, displacement of the heart, and, in right-sided cases, displacement of the liver. These signs occur in about 90 per cent. of the cases. The succussion splash and metallic tinkle are diagnostic, but are found only in a comparatively small number of cases,—about 30 or 40 per cent.

Pneumothorax is a most grave condition. At least 50 per cent. of the cases die within the first month. Occurring in advanced tuberculosis, it is always the beginning of the end. J. M. Cruice (Medical Record, September 23, 1911).

POLIOMYELITIS, EXPERIMENTAL.

The authors collected sweepings in the rooms where cases of poliomyelitis had occurred and after suitable preparation injected them into monkeys. In several instances paralyses resembling or identical with those of poliomyelitis developed. Microscopic examination of sections of spinal cord also showed significant lesions. The authors base their conclusions upon these experimental results and upon the following observed facts with regard to the affection: 1. The disease is eminently an infantile one, occurring in dry season. 2. The character of the neighborhood and the living premises where it occurs play no material part in the spread of the disease. In other words, it can occur anywhere. 3. Several children in the same family may be attacked successively. In a given house, children are attacked in different families in fairly quick succession, and along lines of neighborly communication.

Hence the authors declare that: 1. Poliomyelitis is propagated by dust. 2. The nasopharynx probably is the point of entry. 3. Acute poliomyelitis is both infectious and contagious. It is evident that prophylactic measures should be most rigidly carried out in order to check the spread of this disease. M. Neustaedter and W. C. Thro (New York Medical Journal, October 21, 1911).

POLIOMYELITIS, THE CEREBROSPINAL FLUID IN ACUTE.

Thirty-three specimens of cerebrospinal fluid withdrawn by lumbar puncture from 30 cases of poliomyelitis were studied by the author. In 24 specimens

the fluid was quite clear; in 8 traces of blood were present and clot formation occurred, and in 1, clear on withdrawal, a fine web of clot formed on standing. The presence of albumin was recorded in 24 specimens, the amount varying, as a rule, with the duration of the illness. Cytological examination of the centrifugalized deposit showed usually the presence of lymphocytes slightly in excess of the normal. The relation between an increase in amount of albumin and the presence of lymphocytes in excess appeared fairly constant, and, in the author's opinion, may reasonably be taken as evidence of tissue reaction to the virus—a reaction shown in sections by the perivascular lymphocytic infiltration in the substance of the cord and spinal meninges. Bacteriological examinations proved negative, save where there were obvious contaminations. In conclusion the author states that there can be little doubt of the value of lumbar puncture as an aid to diagnosis between cases of acute cerebrospinal meningitis and acute poliomyelitis of the meningeal type. In the former the fluid shows very unmistakable characters,—marked turbidity; frequently coarse, purulent clot formation; a great excess of albumin, absence of dextrose, a copious cell deposit of polymorphonuclears, and easy recognition of the meningococcus both in the film preparations and cultures on serum. J. Graham Forbes (Lancet, November 18, 1911).

PRACTICAL THERAPEUTIC POINTS.

In acute throat disorders, freshly powdered cubeb taken frequently and in moderate amount, dry on the tongue, has been of more service to the author than any other drug.

Creosote inhalations and moderate bloodletting, especially with leeches, are extremely useful in croupous pneumonia. The application of a few leeches, locally, cannot be replaced by any other agent in many acute, painful inflammatory affections.

Rhubarb and soda, or rhubarb and magnesia, either in mistura rhei et sodæ or in Gregory's powder, are most useful in gastric disorders with fermentation or hyperacidity.

Warm, moist applications after the application of leeches, or, frequently, when no leeches have been applied, are more soothing and more useful locally in appendicitis, pneumonia, pleuritis, and endocarditis than the now fashionable ice-bag.

The best and safest agents to abort a cold are aromatic spirit of ammonia and sweet spirit of niter.

The best combination for mild counterirritation over chest or abdomen is turpentine and soap liniment, equal parts, sprinkled on warm flannel—with or without oil-silk, or thin rubber tissue covering.

Trousseau's diuretic wine is the best combination for old, failing heart and kidneys. Preceded by a few leeches over the precordium, it will reduce edema and prolong life when nothing else will. If it fails, the final resort is to hypodermics of atropine and morphine, in small or moderate amounts.

To acutely inflamed joints—to contusions, sprains, even to open wounds—nothing equals alcohol, or spirit of camphor and water, unless it be tincture of iodine of suitable strength, properly applied.

Quinine sulphate in moderate doses is of more value and does less harm than any other agent in obscure febrile disorders where there is suspicion of septicemia.

Locally, to subdue pain where the skin

is intact, lanolin, menthol, and methyl salicylate combined, covered with absorbent cotton and gauze bandage, are invaluable.

The electrotherm is often also very serviceable and a good substitute for the hot-water bag when pain is a prominent symptom locally.

Fixation of joints with a light splint, properly padded and applied, is essential at times to lessen pain and promote cure in joint affections—especially if they become at all obstinate. Beverley Robinson (Critic and Guide, September, 1911).

PREUREMIA, BABINSKI'S PHENOMENON IN.

The author attributes the greatest importance to a positive Babinski phenomenon in preuremia. Considerably before the likelihood of uremia is heralded by increased reflexes, clouded sensorium, etc., he has found a preliminary depression of reflexes, which he discovers to be more constant and characteristic than the increased reflex excitability which may follow it, and along with the extinction of the patellar and other tendon reflexes he finds associated the Babinski phenomenon. Moreover, the latter may occur quite alone in preuremia. While the author nowhere uses the word pathognomonic in this connection, he clearly believes that the phenomenon possesses the greatest diagnostic value. Curschmann (Münchener medizinische Wochenschrift, September 26; Medical Record, November 4, 1911).

QUININE AND UREA HYDROCHLORIDE.

The author suggests that in the use of this substance as a local anesthetic at least ten to twenty minutes be allowed to elapse between the injections and the operative procedures, in order to secure the full analgesic effect. Postoperative anesthesia lasted on an average three days in the cases in which he employed it. No dermatitis followed its use. There was some induration in the majority of cases, but at the end of three months this had disappeared in nearly all of them.

The drug is less expensive than cocaine. It is soluble in both alcohol and water. It has a very decided hemostatic effect. Some cases have been reported in which it was successfully used in major operations. Any operation usually done with cocaine can be done with this anesthetic. W. A. Boyd (Medical Record, October 14, 1911).

RHEUMATIC POLYARTHRITIS, VACCINE THERAPY IN ACUTE.

Dissatisfied with the salicylate treatment, the author recently began the routine use of streptococcus vaccine in acute rheumatic polyarthritis. He reports 6 cases, all of a very severe character, in which the response to the exhibition of *Streptococcus pyogenes* vaccine was uniformly prompt and satisfactory. In 4 of the cases no salicylates were given, and in 2 cases the patients grew worse in spite of salicylate medication. Under the vaccine treatment the temperature quickly fell in every case, and there was rapid cessation of pain and disappearance of signs of inflammation. The patients, moreover, remarked a feeling of exhilaration, or stimulation, which came on in from three to forty-eight hours after the inoculation. In no case was there any evidence of a harmful negative phase, and in none did any cardiac valvular lesion develop after the use of the vaccine.

In view of the uncertainty still existing concerning the causative microorganism in this affection, the author

believes it wise to employ a mixed streptococcus and staphylococcus (*aureus* and *albus*) vaccine, rather than the streptococcus alone. In the cases reported, however, a stock vaccine made from several strains of streptococci proved markedly efficient. W. C. Wolverton (Medical Record, October 28, 1911).

SALVARSAN, ACID OR ALKALINE SOLUTIONS OF.

There has been some difference of opinion regarding the effects of salvarsan when injected intravenously in acid solution as compared with its action when similarly administered in alkaline solution. After a careful comparative study of the action of the two kinds of solution on sheep and human blood-serum, and when injected intravenously in dogs and in man, the author has reached the conclusions that concentrated acid solutions of salvarsan will almost surely cause death; that weak (0.1 per cent.) acid solutions can be given apparently with absolute safety in individuals who present no contraindications to salvarsan, and that with the exception of the absence of a local reaction when some of the fluid enters the subcutaneous tissue, it is doubtful if there is any advantage in the administration of the acid solution. G. M. MacKee (New York Medical Journal, October 21, 1911).

SALVARSAN, DEATHS FROM.

The author reports two new cases of death succeeding the use of this remedy. The first, observed by Oltramare, of Geneva, was that of an obese man of 48, syphilitic since 15 years, presenting no evidence of renal or cardiac disturbance or of spinal or brain involvement, who succumbed, after a period of coma, three days after an intravenous injection of 0.6 Gm. of salvarsan in alkaline solution. The autopsy showed the presence of a leptomeningitis, of fatty degeneration of the heart, of chronic purulent bronchitis, and of bronchopneumonic lesions in the lower lobes of the lungs. Caraven, of Amiens, brought to the author's notice the case of a young man of 21, without organic lesions of any kind, who died in a similar manner four days after a second injection of 0.6 Gm. of salvarsan, the first injection having been given a week previously. The autopsy showed marked congestion of the brain and lungs, reddened and soft kidneys, and hemorrhagic foci in the stomach lining. The author is of the opinion, in view of these and similar accidents previously observed, that salvarsan is a less useful and much more dangerous drug than mercury. Gaucher (Bulletin de l'Académie de Médecine, November 21, 1911).

SALVARSAN IN PREGNANT WOMEN AND THE NEWBORN, RESULTS OBTAINED WITH.

From a study of the effects of salvarsan administered intravenously in 10 pregnant women in doses of 0.5 Gm., and subcutaneously in 8 newborn infants in doses of 0.03 Gm., the author concludes that, in the former: 1. Salvarsan acts rapidly on mucous patches and causes a rapid disappearance of the spirochetes. 2. A more frankly positive Wassermann test is commonly observed after salvarsan. This may be regarded as affording proof of a reaction on the part of the organism to bacterial products liberated through sudden destruction of a large quantity of spirochetes. After this period of maximal prevention of complement deviation, it is the rule to observe diminution or even disappearance of this effect. 3. Injections of salvarsan in the dose mentioned are not without danger to the fetus, more prob-

ably owing to destruction of the treponemata than to a direct action of arsenic on the fetus. In about one-half the cases a pronounced weakening in the fetal heart-sounds was noted in the days succeeding the injection, and in 2 cases there was some fear lest the child die in the three or four days after injection. 4. The results yielded by the Wassermann test at a given moment in the mother and child may not correspond. Apparent maternal cure with negative serum reaction does not imply that the child is out of danger. 5. The child of a mother in whom the first injection of salvarsan had been given five and one-half months before parturition was born healthy. A child born seventy-two days after salvarsan injection, however, was syphilitic. 6. Salvarsan administered intravenously led to no immediate serious disturbances, and was quickly eliminated. In the way of secondary bad effects, one woman developed grave albuminuria nineteen days after injection, and died five days after delivery, about five weeks after the injection, of pneumonia, which may reasonably be considered to have been aggravated, the author thinks, through the effects of the salvarsan.

From his experiences with the drug in newborn infants the author concludes that: 1. Salvarsan may prove very beneficial in the syphilitic child born at term. 2. It acts very promptly on pemphigus and causes rapid disappearance of spirochetes from pemphigoid lesions. 3. It is capable of producing prompt and lasting recovery from hydrocephalus of syphilitic origin. 4. Disappearance of the phenomena of syphilis, even when associated with a negative Wassermann, does not imply a permanent cure. 5. It is possible that salvarsan lowers the resistance of the newborn infant to intercurrent infections.

The author now advocates the use of doses smaller than those employed in the above series: 0.2 Gm. for pregnant women, repeated in six days; 0.01 for newborn infants, repeated twice or thrice at six-day intervals. P. Bar (Bulletin de l'Académie de Médecine, October 31, 1911).

SALVARSAN, LANOLIN OIL EMULSION OF.

The author describes a method of using salvarsan which he has employed in 30 cases and which is intended for office use by the general practitioner. The remedy is used in the form of an emulsion in a mixture of olive oil containing 10 per cent. of anhydrous lanolin. The salvarsan is first rubbed up in a mortar and a small quantity of the oily mixture added; when this is thoroughly incorporated more is added until the product is thin enough to pass through the needle. Four or 5 drops of the U. S. P. sodium hydroxide solution (5 per cent.) are then added, breaking down the lumps so that the emulsion becomes a soft mass. The syringes used should be packed with composition steam packing, as the emulsion destroys rubber washers and plungers and hardens leather ones so that they are soon useless.

In making the injection the author uses two syringes. One is loaded with the salvarsan emulsion and the other half filled with the plain lanolin and olive oil mixture. The latter is attached to the needle and the needle inserted into the sacrospinalis muscle, as recommended by Meltzer, at the junction of the inner and middle thirds of an imaginary line extending from the crest of the ilium to the tip of the spinal process. The needle is pushed straight in until the thick fascia has been penetrated; then the point is directed inward and upward. (In stout subjects a needle 3½ to 4

inches long is required on account of the thick fat mass between skin and fascia. In the ordinary case a 3-inch No. 18 needle serves the purpose.) After the insertion of the needle the piston is withdrawn, making suction on the oil, and if a vessel has been punctured the oil will be blood-stained, in which case the needle should be taken out. If the oil remains clear, the syringe is now disconnected from the needle, the other syringe containing the salvarsan attached, and the injection made. The syringe is then taken off and the first syringe containing simple oily mixture reattached. Enough oil is injected to clear the needle from salvarsan and the needle then withdrawn. In this way one avoids leaving a trail of salvarsan along the needle tract, and hence the pain resulting from deposition of salvarsan in the subcutaneous tissue.

In the last two cases the author used a tablet of quinine and urea hydrochloride to avoid the pain sometimes occurring after the injection, mixing it up in the salvarsan emulsion. Both cases were remarkably free from pain. J. G. Burke (American Journal of Dermatology, September, 1911).

SODIUM SALICYLATE AND IRON, MIXTURE OF.

In rheumatic conditions associated with anemia the author is in the habit of using a mixture of sodium salicylate and liquor ferri perchloridi made as follows: For an 8-ounce (240 c.c.) bottle, take 1 dram (4 Gm.) of sodium salicylate and dissolve it in about 2 ounces (60 c.c.) of water. Add liquor ferri perchloridi, plus about an ounce of water. This produces a dark-purple mixture with a thick, curdy precipitate. Then add 1 dram (4 Gm.) of potassium bicarbonate dissolved in 1 ounce of water, and fill up the bottle to 8 ounces with water. The precipitate dissolves on the addition of the potassium solution, and the result is a clear claret-colored mixture of an agreeable taste. The color is lighter still if a little more potash be added. (If more of the liquor ferri is used than above indicated, effervescence occurs on addition of the bicarbonate.)

The mixture was found particularly useful in a kind of sore throat apparently of rheumatic origin (primary or secondary) with slight redness and pain, especially on swallowing. H. Drinkwater (Liverpool Medico-Chirurgical Journal, July, 1911).

SOY BEAN AS A FOOD FOR INFANTS.

The author adds further details concerning the uses of soy bean to those already given in former publications. Soy flour is now made in this country. It contains no less than 44.64 per cent. of protein and 19.43 per cent. of fat, and is entirely free from starch and reducing sugars. The uses of the soy bean in pediatric practice are enumerated by the author as follows:—

1. In the form of dilute gruels either with or without the addition of some starchy flour, as barley flour, in summer diarrheas and certain forms of intestinal indigestion. The gruels are sometimes well borne where nothing else seems to agree. Later condensed milk or cows' milk may be added to them. From one to two level tablespoonfuls to the quart usually suffices at first; this may then be increased to four tablespoonfuls to the quart, or sometimes even more. In some instances, particularly if the soy flour is used alone or in too strong gruels, it may cause foul-smelling stools and evidences of intestinal putrefaction; but this rarely happens if dilute gruels are used or if a certain amount of starch is added. Usually the stools are smooth

and have the appearance of those of children fed on malted milk.

2. Cases in which cows' milk disagrees and in which there is difficulty in finding any food containing sufficient nutriment to nourish the child. Soy bean, barley, and condensed milk mixtures may be used in these cases to great advantage; in several children fed for eight or ten months on these mixtures, the results were surprisingly good. Orange juice or some other fresh fruit juice is advisable from time to time to prevent any tendency to scurvy.

3. In diabetes, the food is of great value and serves two purposes: First, it may be prepared in a number of different ways and relieves the tedium of the ordinary diabetic diet; second, as shown by Friedenwald and the author, the use of the beans tends to lessen the glycosuria, especially when used in connection with strict diabetic diets. J. Ruhräh (Archives of Pediatrics, October, 1911).

SYPHILIS, SALVARSAN IN, AND THE WASSERMANN REACTION.

Of 50 cases studied clinically by the author, after a single injection of salvarsan, for periods varying from three to ten months, 27 (54 per cent.) could be considered clinically "cured"; 10 (20 per cent.) were improved materially, and had not yet shown recurrence; 10 others were improved, but later showed recurrence, and the remaining 3 (6 per cent.) showed no change as a result of the treatment.

Recurrence occurred most frequently in the first three months after treatment, though in one case it appeared only after seven months and in another after eight months. The treatment should be repeated within one month in the author's opinion to insure the best results.

The Wassermann reaction remained positive in 33 per cent. of the cases, and became negative and remained so in 30 per cent. for periods averaging four to five months. In the cases considered "cured," the reaction became negative in 41 per cent. and remained positive in 30 per cent.; in the cases which improved without recurrence, 40 per cent. became negative and 20 per cent. remained positive; of the cases improved, with recurrence, 30 per cent. became negative and 50 per cent. remained positive. This showed that the Wassermann reaction is more likely to change from positive to negative in cases which also respond clinically to the influence of the remedy than in cases which do not. The positive reaction is apt to remain uninfluenced in cases in which clinical recurrence takes place.

In the primary cases the reaction became negative in 33 per cent. and remained positive in 50 per cent.; in the secondary cases it became negative in 50 per cent. and remained positive in 36 per cent.; in the tertiary cases it became negative in 15 per cent. and remained positive in 22 per cent.; in the parasyphilitic cases it became negative in 50 per cent. and remained positive in 40 per cent.

The therapeutic effect of a single injection of salvarsan is equivalent to a course of mercury and iodides, in a large proportion of cases,—particularly in primary cases and in cases which have not responded previously to vigorous mercury and iodide treatment. We are still in ignorance of the best method of using salvarsan; we do not know the maximum curative dose, nor how often it should be repeated. All of this information will come to us later, and we shall be better able to judge of the permanent value of

the remedy. A. L. Wolbarst (New York Medical Journal, September 23, 1911).

SYPHILIS, SALVARSAN TREATMENT OF.

From careful observation the author is convinced of the great value of salvarsan in meeting the following indications: 1. Prompt removal of severe genital lesions. 2. The prevention of prompt removal of disfiguring skin lesions. 3. Precocious or malignant syphilis and obstinate destructive bone and cartilage lesions, especially of the face and nose. 4. Cases resistant to or intolerant of mercury. 5. Early nerve and brain and all visceral lesions, with the exception of renal syphilis, in which the author considers salvarsan especially dangerous. In late lesions of the nervous system its use may occasionally be justifiable. 6. Cases of syphilitic cachexia or anemia, which often consist of a combination of overtreatment and syphilis. 7. Severe and rapidly destructive lesions of the throat and obstinate lesions of the tongue. 8. Syphilis involving the organs of special sense, excepting lesions involving the retina. 9. Early tabes or, exceptionally, late—not terminal—cases in the hope of relieving severe pain or involvement of the sphincters. 10. Infantile syphilis.

In general, the intravenous method of administering salvarsan is best for emergencies; it is least annoying and least painful in all cases. The intramuscular method, because of relative slowness of absorption and elimination, sometimes apparently gives better results where speedy action is not indispensable. It is, however, more painful than, and in expert hands not so simple as, the intravenous method as described by the author.

For intramuscular injection, either the lumbar portion of the erector spinæ or the glutei should be selected—preferably the former. The skin is prepared in the usual manner and then painted with tincture of iodine. The author prefers suspension of the drug in iodized oil of sesame, 10 per cent., rubbing up the mixture thoroughly with mortar and pestle. He uses from 3 to 6 c.c. of the iodized oil, slowly injecting half of the dose upon each side of the spine or glutei. The degree of local reaction from the intramuscular method varies. In some cases there is neither local nor general reaction, yet local tenderness and pain at the site of injection and a rise of temperature develop later; 101° F. is the highest rise the author has witnessed.

For the intravenous method he employs the Luer syringe, using only 10 c.c. of sterile salt solution and mixing the doses in a mortar. He has used as little as 5 c.c. with no untoward results, and favors the reduction to a minimum of the bulk of fluid injected. As soon as the solution clears under the addition of 15 per cent. sodium hydrate, drop by drop, the fluid is filtered and injected. Time spent in endeavoring to neutralize the solution is time wasted, for precipitation results and filtration merely removes some of the salvarsan. The alkaline solution, moreover, is unirritating. The quantity of sodium hydrate necessary to give a clear solution seems to vary somewhat with different samples of salvarsan. The fluid must be kept and injected at blood temperature and injected very slowly. The rapid flow of blood in the vein dilutes the drug so thoroughly, if it is slowly injected, that it is absolutely shorn of all irritating properties.

Patients are usually very little inconvenienced after the intravenous method. In some there is a slight rise of temperature; in a few, three or four degrees. Psychic shock is occasionally met with. Local reaction after this method means one or several of the following: 1. Infection. 2. Injection of the fluid into

the circumvascular cellular tissue. 3. Penetration and injection of the wall of the vein. 4. Transfixion of the vein and injection into the sublying tissues. 5. Too rapid injection.

Independently of the result of the Wassermann test, the author advises the repetition of the dose of salvarsan in about four weeks. Subsequent treatment should be governed by both the Wassermann test and the clinical course of the case. G. Frank Lydston (New York Medical Journal, October 21, 1911).

THYROID GLAND DOSAGE.

The doses in which thyroid is usually prescribed are, the author rightly states, many times too large. The ordinary dose is officially quoted as from 3 to 10 grains [4 grains, U. S. P.]. Very few people, except certain types of lunatics, will tolerate such doses under any circumstances, and not even they are able to do so unless this dose is arrived at by a gradual increase from small beginnings. It is a clinical fact, well recognized by those who have any real experience in the use of the drug, that, the more the patient requires thyroid extract, the smaller should be the initial dose. Since the author has been using it he has been driven back and back in the dosage, and now seldom begins with more than ¼ grain three times a day. He never prescribes a larger dose than 5 grains three times daily, and then only in pronounced myxedema after several weeks' treatment. He has had many patients who were unable to take more than $\frac{1}{20}$ grain once a day, but this was in each case sufficient completely to protect them from the symptoms of which they originally complained. In connection with the "allotropic disease" (rheumatism and allied states, including chorea), he suggests that the prophylactic dose for an adult should not exceed $\frac{1}{10}$ grain three times daily, and that ¼ grain three times daily is a sufficient therapeutic dose to start with.

The case is reported of a girl aged 10 suffering from severe chronic chorea in whom thyroid medication proved successful. Large doses of Fowler's solution, ordinary doses of arsenic in combination with fluidextract of ergot, and salicylate of sodium having all been tried without benefit,—the arsenic, indeed, provoking active symptoms of intolerance,—thyroid extract in doses of ½ grain three times daily was then administered. At the end of a week the movements had completely ceased, and the child felt better and seemed brighter than she had done for months. In another child, this time with acute chorea (her second attack), thyroid medication in similar dosage, together with rest in bed and meat-free diet, led to abatement of the movements in a few days and to their entire cessation in three weeks. Leonard Williams (Practitioner, November, 1911).

THYROIDITIS, ACUTE.

The thyroid body may become more or less severely involved in the course or at the decline of infectious diseases. Preexisting lesions of the gland act as a predisposing cause. The parenchyma then suffers direct injury, histologically and functionally, with the result that, as shown by Roger and Garnier, there occurs first a hyperthyroidia, then dysthyroidia and even athyroidia. The author draws attention particularly to the cardiovascular disturbances which appear under these conditions, and reports illustrative cases: (1) That of a young woman who had developed a very mild degree of puerperal infection, then a rather mild strumitis upon which, however, fatal bronchopneumonia was superadded as a complication; (2) a case of

thyroiditis occurring on the forty-third day of typhoid fever; exploratory puncture of the gland yielded blood containing the typhoid bacillus in pure culture; rapid recovery; (3) a case which appeared after an attack of mumps and lasted only a week. A remarkable feature of these cases was the uniformity of the group of symptoms referable to thyroid involvement, viz., slight fever, thyroid enlargement, tachycardia (120 to 130), lowering of the vascular tension (110 to 120 mm. Hg), cervical pain. In a fourth case cited by the author thyroiditis supervened at the period of decline in pneumonia and necessitated surgical intervention. The gland was incised at the point of fluctuation, liberating greenish pus, which furnished a pure culture of the pneumococcus. J. Parisot (Presse médicale; Revue hebdomadaire de Laryngologie, d'Otologie, etc., October 28, 1911).

TRIFACIAL NEURALGIA, ALCOHOL INJECTION IN.

The results obtained in 48 cases by the injection of alcohol according to the method of Lévy and Baudoin are reported by the author. The period of relief following successful injections varied from a few months to over two years. In a few cases there had been no recurrences up to the time of writing; in most of the cases the neuralgia had recurred and injection again afforded relief. In 2 cases of the series there was only partial relief, for six weeks and two months respectively; in 5 cases there was no relief after one or two injections.

The ages at time of injection ranged from 29 to 78 years. The right side was involved 33 times, the left 17, 2 of the patients having both sides affected. The third division of the trifacial was most frequently involved, the first least frequently. All patients had previously been treated unsuccessfully by various other methods. A cutting operation had been done on 15 patients,—nerve resection in 14 and excision of painful area in 1.

In addition to the above cases alcohol injections were given in 12 cases of facial pain due to various other causes, 4 of them having been mistaken for trifacial neuralgia. The author as a result of his experience came to the conclusion that the injection should be limited to cases of true tic douloureux, the distinctive diagnostic feature of which is the paroxysmal pain, with or without a tic—an intense, cutting, burning, shocking pain of from a few seconds to one or two minutes' duration, which occurs without known immediate cause and may be excited by various stimuli, such as touching the face, opening the mouth, talking, chewing, swallowing, sneezing, coughing, brushing the teeth, a draught of air. There is great variation in the frequency of paroxysms—from 1 or 2 to 30 or 40 a day. While there is usually no pain between paroxysms, some patients have a dull ache or an abnormal sensation, which gives them comparatively little concern. The tic may be a feature of one attack and absent in the next. There may or may not be certain vasomotor disturbances, lachrymation, salivation, nasal secretion, injection of conjunctiva, flushing of face. Pressure over foramina of exit on the face may or may not be painful and may induce a paroxysm.

Most of the injections in the cases reported were made without general anesthesia; for many of the more recent injections a short gas anesthesia was induced, occasionally replaced by ethyl chloride. No serious untoward effects of the injections were noted. In the injec-

tions for recurrences, made several months after the first injections, increased resistance to the introduction of the needle was noticed, indicating the formation of fibrous tissue as a result of the earlier injections. F. C. Keller (New York Medical Journal, July 1, 1911).

TUBERCULOSIS, LOCAL USE OF TUBERCULIN IN SUPERFICIAL FORMS OF.

The author reports 10 cases, comprising suppurative tuberculous cervical adenitis, tuberculous anal fistula, and tuberculous sinuses, in which the local application of tuberculin yielded satisfactory results. In describing the procedure the author states that the parts are first irrigated with normal salt solution. The tuberculin is then sprayed, using a hypodermic syringe, over the entire diseased surface. Where deep sinal tracts are to be treated a flexible cannula is attached to the syringe and bent so that it will follow the tract. When it has traversed to the entire depth of the sinus it should be carefully withdrawn and the syringe at the same time slowly emptied of its contents. Enough of the solution should be used to fill entirely all openings. It is necessary to have the tissues along the entire sinus react to the application of tuberculin, which must accordingly be retained long enough for this purpose. By instructing the patient to remain in one position and sealing the mouth of the sinus with collodion for several hours, a complete reaction is obtained.

Twenty-four to forty-eight hours after the first application, the mucopurulent discharge is greatly lessened and usually tinged with blood. Twenty-four hours later it is thin and semisanguineous. The parts are greatly congested, tender, and very sensitive. The cellular structure, previously of low vitality and very ischemic, has changed to the pinkish color of healthy tissue. New cell growth is greatly stimulated. The wound is not disturbed except for the renewal of external dressings. Twenty-four to forty-eight hours later the reaction begins to subside. The parts are again irrigated with saline solution, and an increased strength of tuberculin applied. The treatment is continued and repeated as often as seems necessary until a cure is produced.

The initial dose of tuberculin used should be small. In applying tuberculin to large areas great care must be exercised in order that the dose be insufficient to cause a general reaction. The increase in dosage and the frequency of repetition of the treatment are determined by close observation of the extent of the previous local reaction.

In the 8 cases of the author in which only soft tissues were involved, the disease had been present for periods ranging from one month to two and one-half years and various treatments had been used without success. By means of the repeated local application of tuberculin, complete cures were obtained in every case within ten to thirty-five days. There have been no recurrences, though in some instances two and one-half years have already elapsed. T. J. Beasley (Journal of the Indiana State Medical Association, October, 1911).

TUBERCULOSIS, TUBERCLE BACILLUS IN THE BLOOD IN.

The author adds another to the many researches recently conducted on this subject, and claims to have found the bacilli in the blood in all cases of pulmonary tuberculosis. The percentages of positive results obtained by previous observers were 30 to 40 on an aver-

age, with the exception of Rosenberger, who obtained 100 per cent. positive results in 80 cases, including 15 of early phthisis. The present author obtained positive results in his entire series of 155 cases, including patients both in early and late stages, and also in 59 per cent. (20) of 34 individuals not considered tuberculous. He employed a modification of the Schnittler-Staübli method, using undiluted antiformin. All the instruments and solutions employed were carefully sterilized, and were shown to be absolutely free from acid-fast bacilli. Residue of blood treated by antiformin, injected into guinea-pigs, produced tuberculous lesions, thus proving the bacilli seen in the blood to be tubercular and the antiformin not to be destructive to the bacilli in the period in which it was used.

The entrance of tubercle bacilli into the blood, the author concludes, is not always followed by acute miliary tuberculosis. This fact, moreover, cannot be explained merely by the small number of bacilli present,—the author having found them in considerable abundance in a number of cases,—but is probably due to many other important causes. The tubercle bacillus occurs in the blood quite early in the disease, and its presence appears not to be temporary. The examination for it is of great diagnostic value, though the prognostic value is, on the contrary, small; it is a mistake to consider the presence of the bacillus in the blood a precursor of death. T. Kurashige (Sei-i-kwai Medical Journal, October 10, 1911).

TUBERCULOSIS, TUBERCULIN AND AUTOGENOUS VACCINES IN PULMONARY.

After a comparative study of 380 cases of pulmonary tuberculosis, 146 of which received tuberculin and 234 were treated by the hygienic-dietetic method alone, the author reports that among the incipient cases the percentage cured and benefited in the tuberculin-treated group was about the same as in the untreated. The percentage of deaths, however, in the untreated was over twice that in the tuberculin-treated group. In the moderately advanced stage the tuberculin-treated cases showed a marked advantage both in the percentage cured and improved, and the percentage of deaths in the tuberculin-treated group was very much less than in the untreated. The number of cases in the far advanced stage was too small for comparison, but from the cases recorded it could be seen that little in the way of treatment can be done for these cases. From these results the author has become convinced that tuberculin is of therapeutic value in pulmonary tuberculosis, especially in moderately advanced cases, and is of especial value as a protection against relapse.

With regard to autogenous vaccines, he reports 75 cases treated in this manner during the past two years. The more rapid return of the temperature to normal, the diminished expectoration, and the prevention of hemorrhage in these cases, he says, would indicate that the injection of the autogenous vaccine assists the body in throwing off the secondary infection, though it is too early as yet to come to any conclusion as to the ultimate results.

The usual hygienic-dietetic measures for increasing the general resistance of the patient should, of course, not be neglected in favor of the tuberculin and autogenous vaccine methods of increasing the specific resistance; to produce the best results these several methods should be used together. R. T. Pettit

(Journal of the Indiana State Medical Association, October, 1911).

TYPHOID FEVER, RUSSO'S TEST IN.

For a year the authors have been applying this test, originally described in 1905, in typhoid cases. As a result they are prepared to vouch for its efficacy as a diagnostic aid, if used early enough in the disease. They tabulate a series of 15 cases in which the results of the test, as compared with those of the diazo and Widal reactions, seem superior to the latter in uniformity. Positive tests were noted also in many other cases of typhoid in which the ordinary laboratory examinations were not made. In non-typhoid patients the results were invariably negative, except in a few cases of tuberculosis. The earlier in the disease, the more likely and the more typical the reaction,—an important point of difference from the other laboratory tests, except the blood culture.

The test is performed by adding to 4 or 5 c.c. of the patient's urine 4 drops of a 0.1 per cent. aqueous solution of methylene blue. After thorough admixture the urine is examined against the light; a mint or emerald-green coloration is positive, whereas any bluish tinge renders the test negative. One should have seen the typical color once or twice to be sure of the results. As the disease advances, there is a gradual resumption of the bluish tinge; though experience will often enable one to distinguish the returning blue tint of a convalescent typhoid patient from that of a normal or non-typhoid urine.

The reason of the mint or emerald-green color is doubtful, but it is probably a reduction test, depending upon the presence of unknown bodies in the urine.

Urines containing bilirubin give a reaction differing so slightly from the typical green that they cannot be used for the test. A preliminary test for bile must, therefore, be made to determine the availability of the Russo test in the given case. F. W. Rolph and W. H. Nelson (Medical Record, August 19, 1911).

VINCENT'S ANGINA.

The symptoms of the tonsillar or usual type of Vincent's angina show similarity to those of lacunar tonsillitis. The most important differences are: (1) in Vincent's angina fever is absent; (2) the pain is more localized on the affected side and is severe and lancinating; (3) the general malaise and physical exhaustion are very profound. The usual site of the infection is the upper angle of the tonsil behind the anterior pillar. The cervical glands are rarely affected in cases of ordinary severity; in the virulent type of infection, however, they are always markedly swollen and very tender.

Many of the patients consult the physician late, and not so much on account of the sore throat as for the general "run-down" physical condition. Unless treatment is directed at the offending crypt, however, it is usually far from satisfactory. The two cardinal points of attack are promotion of drainage and stimulation of nature's effort at repair. No matter what the stage of the disease, the author on the first visit performs a gentle curettage of the crypt by means of a cotton-wrapped probe. An application of 12 per cent. silver nitrate is then made. Upon experimentation with weaker and stronger solutions, as well as with phenol and other cauterants, the silver solution in the above strength was found most effective. All cases yielded satisfactorily to this measure. W. P. Wherry (Laryngoscope, October, 1911).

Book Reviews

A Textbook of Mental Diseases. By Eugenio Tanzi, Professor of Psychiatry in the Royal Institute of Higher Studies of Florence. Authorized Translation from the Italian by W. Ford Robertson, M.D., C.M., Pathologist to the Scottish Asylums, Edinburgh; Foreign Member of the Società Freniatrica Italiana, etc., and T. C. Mackenzie, M.D., F. R. C. P. Edin., Medical Superintendent, Inverness District Asylum, etc. Octavo of xvi+803 Pages, Illustrated. New York: Rebman Company, 1910. Cloth, $7.00.

Psychiatry, as the author well states in his preface, is, notwithstanding its actual deficiencies, one of the most aristocratic of sciences on account of the position it occupies as a special branch of biology. "It is the advanced sentinel of biology in the speculative field, and although its arms are short, its vision is far-reaching." The present work is intended not only for the professional alienist and general practising physician, but also for laymen whose vocation leads them more or less frequently to the study of mental affections,—lawyers, writers, etc. The author not only gives a very satisfactory description of mental diseases, but goes deeply into the causation and significance of the phenomena characteristic of each.

The earlier chapters of the work deal, respectively, with the seat of the psychical processes, the causes of mental diseases, the anatomical substratum of mental diseases, sensibility, ideation, memory, the sentiments, movements, and other external reactions. Next, the author discusses the classification of mental diseases. After reviewing some of the older schemes of classification, he describes that of Kraepelin, now generally followed. He praises it because it is founded upon general clinical criteria, thus removing psychiatry from its former position of isolation, but considers it defective, on the other hand, in that it is too complex,—that the various psychoses "have been made the subject of too much analysis, with the object of discovering a symptomatic dress corresponding to every lesion and to each morbid agent." Believing the most useful criterion in a classification of mental diseases to be that of causes, the author presents a scheme of his own disposed accordingly. The various disorders are disposed in a series ranging from those which are most clearly external and accidental as regards causation to those, at the other extreme, which can be called absolutely degenerative. The intermediate members of the series become more and more constitutional and internal. At the one extreme are the poisonings, such as pellagra, alcoholism, morphinism, and cocainism; next come "toxic infections and autointoxications," including amentia, uremic psychoses, thyroid psychoses, and progressive paralysis; the next group, that of encephalopathies, includes infantile cerebropathy (acquired idiocy) and cerebropathies of adults (cerebral tumors, head traumatism, cerebral syphilis, apoplectic dementia, senile dementia). The remaining groups comprise the affective psychoses (melancholia, mania, circular psychoses); "constitutional neuropsychoses" (constitutional neurasthenia, hysteria, epilepsy); dementia præcox (hebephrenic, catatonic, and paranoid forms), and "degenerative mental anomalies" (perversion of sexual instinct, constitutional immorality, paranoia, intellectual feebleness, or hereditary imbecility). That this last group of anomalies is a natural one, the author points out, is borne out by the facts that two or more of them may be associated, that none have a progressive course, and that all degenerates present certain common features—fantastic character, carelessness in behavior, and egotism.

In the second part of the book these various conditions are taken up in the same order as they figure in the classification. His presentation throughout is clear and complete. The sections on pellagra, thyroid psychoses, and constitutional immorality are particularly illuminating. The work closes with a chapter on asylums and an index. The translators are to be congratulated on the excellence of their work. On the whole this book represents a very valuable addition to the works on psychiatry at our disposal. It is already being frequently quoted in American and British literature. We recommend it strongly to all physicians interested in mental diseases.

A Textbook of Medical Diagnosis. By James M. Anders, M.D., Ph.D., LL.D., Professor of the Theory and Practice of Medicine and of Clinical Medicine, Medico-Chirurgical College of Philadelphia; Officier de l'Instruction Publique, etc., and L. Napoleon Boston, A.M., M.D., Adjunct Professor of Medicine, Medico-Chirurgical College; Physician to the Philadelphia General Hospital; Pathologist to the Frankford Hospital. Octavo of 1195 Pages, with 418 Illustrations in the Text and 25 Plates, 17 in Colors. Philadelphia and London: W. B. Saunders Company, 1911. Cloth, $6.00, net; Half-morocco, $7.50, net.

This large volume is built up on somewhat the same lines as a textbook of practice of medicine, though, of course, special stress is laid on facts of diagnostic import. The various affections are grouped according to the system to which the organ involved belongs, *i.e.*, the diseases of the respiratory system are considered together; next appear those of the cir-

culatory system, etc. Under each disease are given: 1. A Clinical or Pathological Definition. 2. General Remarks. 3. Predisposing and Exciting Factors. 4. Principal Complaint. 5. Physical Signs. 6. Laboratory Diagnosis. 7. Summary of Diagnosis. 8. Differential Diagnosis. 9. Clinical Course and Duration. 10. Complications. Free use is made of charts and of comparative tables to bring out more clearly and forcibly the essential points in the differential diagnosis of nearly related affections. Illustrative cases are also given in small type under the main headings; the case history is followed by the physical examination and laboratory findings, and the process of reaching a diagnosis on the basis of the facts available discussed for the reader's benefit. The processes and methods of investigating cases for the purpose of reaching a diagnosis are also considered in a general way in an introductory chapter.

Thus, it will be seen that the plan of the book is a good one. Its execution, too, has been in most respects admirable. There are a few features, however, in which improvements would seem desirable. More details as to methods of laboratory diagnosis might have been given with advantage. Why should not methods for the quantitative estimation of phosphates and sulphates in the urine be described in a work of this size and general scope? None of the tests for glucose in the urine is given,—though this seems to have been by mere inadvertence, as nearly all the other qualitative tests are included. Diseases of the ductless glands appear to have suffered neglect in comparison with other disorders. There is no section on Addison's disease, which does not even appear in the index. Exophthalmic goiter and acromegaly each occupy a couple of pages in the portion of the book devoted to diseases of the nervous system, but the space is largely taken up with illustrations. Twelve lines are supposed to cover the subject of myxedema.

After all, the shortcomings above mentioned are of little significance in so far as the general usefulness of the work is concerned. In other particulars the book is excellent throughout. It deserves a high rank among the numerous works on diagnosis now available to the practitioner.

Personal Hygiene and Physical Training for Women. By Anna M. Galbraith, M.D., Author of "Hygiene and Physical Culture for Women" and "The Four Epochs of Woman's Life"; Member of the New York County and State and the American Medical Associations; Fellow of the New York Academy of Medicine; Ex-President of the Alumnæ Association, Woman's Medical College of Pennsylvania; Former Attending Physician, Neurological Department of the New York Orthopedic Hospital and Dispensary, etc. 12mo of 371 Pages, with 85 Text Illustrations and 8 Plates. Philadelphia and London: W. B. Saunders Company, 1911. Cloth, $2.00, net.

The aim of this book is to describe as much of physiology as forms the basis of personal hygiene and thereafter to give detailed directions for securing proper physical development and maintaining the body at its highest mark of efficiency. Though the book is intended more particularly for women, much of the information and advice furnished applies equally to the male sex.

The opening chapter deals with Hydrotherapy. In it are described the anatomy and functions of the skin; the effects of water, hot and cold; the chief varieties of baths; the tub; the alcohol rub; the cold dip; alkaline and saline baths; the shower bath; the Turkish bath; the electric light bath, etc.; the internal use of water and its therapeutic indications; enemas; the vaginal douche; douching the ear. Next comes a chapter on The Care of the Skin and its Appendages: the complexion, the hair, and the hands and feet. The remaining sections are on The Digestive System and the Maintenance of Good Digestion; The Respiratory and Circulatory Systems and the Kidneys; The Nervous System as the Balance of Power in the Body; The Hygiene of the Mind and its Relation to the Physical Health; Dress the Fundamental Cause of Woman's Physical Deterioration; Physical Training the Key to Health and Beauty; Symmetric Development: Good Carriage and Grace of Motion Through Gymnastics and Athletics.

Throughout stress is laid rather on practical details than on theory. In the latter part of the book much space is devoted to gymnastic exercises for women. The author is strongly in favor of these and of classic dancing as being of assistance in the proper physical development of woman. As compared with other works of this kind the book is characterized by moderation of tone and accuracy of statement. The text is devoid of technicalities and will be easily understood by the lay reader. In truth, it may be said that the author has most amply and satisfactorily fulfilled the aims formulated in the preface. The illustrations are good.

A Manual of Practice of Medicine. By A. A. Stevens, A.M., M.D., Professor of Therapeutics and Clinical Medicine in the Woman's Medical College of Pennsylvania; Lecturer on Medicine in the University of Pennsylvania; Physician to the Episcopal Hospital and to St. Agnes's Hospital; Assistant Physician to the Philadelphia Hospital; Fellow of the College of Physicians of Philadelphia, etc. Ninth Edition, Revised. 12mo of 573

Pages, Illustrated. Philadelphia and London: W. B. Saunders Company. 1911. Flexible Leather, $2.50, net.

It is with pleasure that we note the appearance of the ninth edition of this excellent manual. In the four years that have elapsed since the last revision many fundamentally new facts have been added to our knowledge which demand mention even in a book of this size. Accordingly we find that the sections on dysentery, acute pancreatitis, worm infection, rheumatic fever, dengue, rheumatoid arthritis, purpuras, aphasia, myelitis, acute anterior poliomyelitis, and disseminated sclerosis have been rewritten. Acute dilatation of the stomach, mucous colitis, sprue, suppurative cholangitis, beriberi, Malta fever, sleeping sickness, plague, and last, but not least, pellagra are treated in this edition for the first time. Thus amplified, the book will prove even more useful than heretofore to those who desire to review the whole field of medical practice in a short period of time or to look up the elementary facts relating to some particular disease.

The Prevention of Sexual Diseases. By Victor G. Vecki, M.D., Ex-President San Francisco German Medical Society; Member American Urological Association, American Medical Association, California State Medical Society, etc. With Introduction by William J. Robinson, M.D. Octavo of 132 Pages. New York: The Critic and Guide Company, 1910. Cloth, $1.50.

According to Fournier, syphilis is now ten times as serious a disease as it was for our predecessors. By this he means that our present knowledge of the relation existing between syphilis and the "parasyphilitic" affections brings out more clearly the dangerous consequences of the former. Similar statements could be made concerning gonorrhea, every advance in our knowledge of this form of infection having only served to extend the range of its morbid effects. For this reason, perhaps, and also because of the fact that prudery is no longer in fashion, we are now experiencing an awakening in the study of questions of sex in general and in particular of venereal prophylaxis.

In this book the author considers the latter subject in all its aspects and in a most direct, matter-of-fact way. He does not, indeed, present anything very new in the way of general venereal prophylaxis, but brings together the various arguments that have been advanced and the remedial measures that have been proposed, thereby furnishing the reader a basis on which to form an intelligent opinion of the various phases of the subject.

The author's attitude is well expressed in the following sentences: "Instruction means teaching of truth. To teach lies is no instruction. The truth must be told to everybody; to the children, to begin with. No one can be safe from venereal infection unless he knows all about it and is willing to use the knowledge to protect himself." He is an advocate of segregation and official supervision of prostitution; also of the requirement of a certificate of freedom from venereal disease before marriage. In the final chapters of the book he describes the physician's duty toward prevention of the spread of these affections, gives directions for individual prophylaxis, and formulates conclusions. There is a bibliography at the end.

The Physician's Visiting List (Lindsay and Blakiston's) for 1912. For 25 Patients Per Day or Week. Philadelphia: P. Blakiston's Son & Co. Price, $1.25.

That this visiting list must have filled a want is indicated by the fact that it is now in the sixty-first year of its existence. It is very conveniently and compactly arranged, is of pocket size, and is provided with a pencil, pocket for loose notes, etc. In addition to the spaces for names of patients, dates of visits, amount charged, etc., blank pages are provided for memoranda, addresses of patients, bills and accounts asked for, obstetric engagements, births, deaths, and cash account. At the beginning of the book is a table of signs for use in the "visiting list" proper; also information on incompatibilities, the treatment of cases of poisoning, weights and measures, doses of various drugs, asphyxia and apnea, comparison of thermometers, calendar, etc.

The Modern Materia Medica. The Source, Chemical and Physical Properties, Therapeutic Action, Dosage, Antidotes, and Incompatibilities of all Additions to the Newer Materia Medica that are Likely to be Called for on Prescriptions, together with the Name and Address of the Manufacturer or Proprietor, and, in the Case of Foreign Articles, of the American Agent. Second Edition, Revised and Enlarged. 12mo of 432 Pages. New York: The Druggists' Circular, 1911. Cloth, $1.25.

In this book are enumerated, in alphabetical order, the various pharmaceutical products now on the market. Under each name information is given concerning the nature and uses of the substance; also the name of its manufacturers. About 3500 products altogether are included,—eloquent evidence of the activity and ingenuity of modern chemists and manufacturers. The list seems to be a most complete one and the information supplied accurate. The book will prove very handy as a work of reference on non-official products.

The General Field

Conducted by A. G. CRANDALL

Half Doing Things

In the medical profession as well as out of it there is a constant temptation to deal lightly with the relatively unimportant things. This is one of the disintegrating factors in any profession or calling.

The successful attorney is the one who brings to an early and reasonably satisfactory outcome the relatively unimportant case, instead of letting it lag along to the dissatisfaction of his client. This leads to more and more business and to greater profits.

While there are few physically perfect people, there are many who suffer needlessly from some functional disability, and the family doctor carelessly permits the condition to continue rather than insist upon the patient carrying out recommendations which will involve a little trouble.

Success wins other successes just as much in small things as in great. The patient who finds that the family physician is determined if possible to relieve him of the tendency to heart-burn or lumbago may do some growling, but he appreciates the doctor just the same.

Expert Evidence Always Available

Willis L. Moore, Chief of the U. S. Weather Bureau, has again come to the rescue of the lumber interests by declaring that deforestation has no bearing upon rainfall. This statement is similar to the one issued by him a year or two ago, at which time he further stated that the melting of snow in the spring of the year was more rapid in a wooded area than in the open fields.

Any one who has been a resident of the country districts can understand how much importance is to be attached to this latter statement.

The shrinking away of the streams during the summer season becomes more and more serious as the forest stretches are denuded of timber. That the influence of the winds traversing the hot and dry mountainous regions should not have an unfavorable influence upon rainfall is unbelievable.

Such official statements from the weather chief are as comforting to the lumber interests as are the proclamations of the Remsen Board with regard to the use of chemical preservatives in canned fruits and vegetables to certain manufacturers.

Some Inconsistencies in Public Hygiene

The Legislatures of certain States have passed laws to prohibit the use of the public drinking vessel, a course of action naturally in line with the results of modern medical research.

The maximum results, however, of this regulation seem to have been to cause the public considerable inconvenience and to safeguard them very little.

It is a comforting thing, no doubt, to those who are interested in proper sanitation to believe that this regulation with reference to the public drinking cup is likely to produce favorable results upon the public health. We would, however, invite the attention of sanitarians in general to the water glasses and other drinking utensils in use in the average restaurant.

It is possible that a microscopic examination of the glass tumblers used in ordinary quick-lunch establishments would show some exceedingly healthy colonies of germs of all ages and assorted styles.

It does not seem to be considered necessary in conducting a restaurant to sterilize the drinking vessel. As there are probably 50 patrons of the low-priced restaurants to 1 patron of the drinking cup in the train, legislative efforts along this line would seem to have been but just begun.

Superfluous Literature

The literary editor of a prominent daily newspaper reports that in the past twelve months 3000 different books have been received by him for review in his publication.

While the character of these books is not indicated by the report, the probabilities are that a very high percentage of the number were light fiction.

The influence of such an inundation of literature of classes calculated to serve no useful purpose is certainly regrettable. It reflects social conditions unfortunate in their tendency.

The custodians of public libraries say that nearly all of the books taken out by patrons are of the same light class.

A great deal is said of the demoralizing influence upon society in general of the so-called "idle rich." The enormous circulation of cheap fiction indicates that there is much to be said as to the shortcomings of the idle poor.

It is evident that those entrusted with the purchase of books for public libraries are in many instances remiss in their duties, and that parents who have not only the privilege of directing the literary taste of their children, but should also feel a sense of obligation to do so, are guilty of very serious neglect.

There is a wealth of fine literature, which, like good music, exerts a wholesome and uplifting influence. Children should be encouraged to develop a taste for that class of literature.

Too Many Medical Frills

It is a hard dose for the average parents when the medical inspector for the public schools sends a notice that the apparently sturdy romping boy or girl needs glasses, more soap and water, and less tonsils and adenoids.

Finding this out by numerous experiences, many inspectors relax their zeal and become more or less perfunctory in their system of supervision, dreading the disapprobation of many parents of ordinarily good sense and judgment.

The safe course in this kind of practice, as in all kinds, is to stick to the safe middle ground and insist firmly upon that which is essential to the good repute of the service and avoid taking an extreme position on any point that is debatable.

It is a great misfortune for a young child to be doomed by some extremist in the medical profession to the necessity of wearing glasses. It is to be avoided unless the subjective consequences are so plainly marked as to admit of no question as to the necessity. The practice of removal of the tonsils has its advocates, but many physicians of wide experience and high qualifications are unconvinced as to the wisdom of this operation unless under extreme conditions.

The medical inspector should take these facts into consideration and advocate no radical measures unless he is very sure of his ground. Too much paternal government is worse than neglect.

The Natural Guardians of Public Health

While the resolution habit is quite frequently in disrepute because of the triviality of the subjects under discussion, whenever representative medical men speak with unanimity on a public question their utterances command respect among all classes.

There is no greater opportunity awaiting the initiative of the medical profession at this time than the exercise of such influence as they possess for the purpose of bringing about improved sanitation of public conveyances, especially the ordinary "day coach" of the steam railways. While the railroads have in many instances betrayed public confidence in such matters as the issuance of stock certificates more ornamental than useful, their most aggravating offense, because so easily preventable, has been the indifference shown in the equipment and sanitation scheme of the ordinary passenger cars.

The usual conditions present an alternation of intolerable stuffiness with a sudden change to the other extreme, dirt and disorder being a regular feature. This is due to pure indifference of the railway officials all the way down to the latest recruit in the train service.

A united front on the part of the medical profession would do much to create sentiment tending to the correction of these abuses.

Dangerous Medical Counsel

A recent issue of the *Saturday Evening Post* contains a very entertaining account of the experience of a middle-aged man who determined to reduce his weight from 250 pounds or more to a more normal aggregate. The purport of the article goes to show that no one need expect any intelligent advice from a medical man, but that the victim of obesity must solve the problem for himself.

This argument in itself is sufficient to indicate the sophistry of the contention of the writer. When a journal with so large a circulation publishes material calculated to discredit the medical profession as a body, the next logical step should be the admission of the quack medicine advertisement, which, however, to the great credit of the publication in question, is rigidly excluded.

The writer of this article calls attention to the fact that when the physician is himself ill he calls for assistance from another member of the same profession, the writer very inconsistently making this argument in favor of his own policy of self-treatment. He then proceeds to explain that he reduced his own weight 50 pounds by cutting down his daily ration 60 per cent. The fact that a great number of corpulent people are small eaters, barely consuming sufficient food to maintain a moderate degree of bodily energy, shows how dangerous this suggestion is as a means of treatment.

The recklessness shown by publishers of so-called family newspapers in circulating misleading medical suggestions is proverbial, but it is somewhat surprising to see the editors of a periodical of the supposed high standing of the *Saturday Evening Post* guilty of this offense in such a serious form.

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Original Articles

SOME EUROPEAN SPAS—A PEEP BEHIND THE SCENES.*

BY HEINRICH STERN, M.D.,
NEW YORK, N. Y.

EARLY impressions are lasting. Subtly they guide the mature mind, and the man meditates upon that which the boy had perceived. From the windows of my father's house we could see the Taunus, the mountain range extending north of the Main and westward to the Rhine. In this picturesque region I spent many a Sunday and all my vacations, and our relatives in Wiesbaden and Langen-Schwalbach, in Soden, Nauheim, Homburg, and half a dozen other communities aspiring to be watering-places, unwillingly answered the many questions of the inquisitive boy.

The interest in his native soil has remained with the man through space and time.

My grandfather made his yearly pilgrimage to Nauheim for the cure of his, what they then called, rheumatism. And now, Who ever mentions Nauheim and rheumatism in one breath? There was even a time when they made it a specialty at Nauheim to treat tabes. Thus, almost within my own recollection, the medical powers that were caused Nauheim to shed its skin three times: until about 1870, its waters were exploited as a sure cure for tabetic degeneration; from then until the early nineties, it was mainly rheumatics who swelled the coffers of the Nauheimers, and, ever since, it is the cardiopaths—real and imaginary—who travel to the mystic waters in quest of health. But the water of the Karlsbrunnen has remained exactly the same; it leaves the spring at 59° F., exhibits per thousand parts 12.1 parts solids, and contains 9.8 parts per thousand of sodium chloride and 1 part of calcium chloride. The amount of carbon dioxide of this water is larger than that of the warmer Friedrich Wilhelm Quelle, but is decidedly less than that of the Soolsprudel in Kissingen, the Soolbrunnen in Soden, the Elisabethbrunnen in Homburg, the Salzquelle in Pyrmont, and less than half of that of the warm Soolsprudel at Soden. Surely not an impressive showing when carbon dioxide is ostensibly the main asset of contemporaneous Nauheim!

* Read before the Medical Association of the Greater City of New York, November 20, 1911.

It was not the elder Schott, as many erroneously believe, who first drew attention to Nauheim as an eldorado for cardiopaths, but Professor Beneke, of Marburg University. In the beginning of its cardiocurative era, Nauheim had no other method than that in vogue in dozens of other German health resorts: the Oertel terrain cure. The resistance movements came as an afterthought. They were intended to establish the leadership of Nauheim in matters cardiocurative, or, to be more exact, to replenish the stock in trade of a petty local dealer, who happened to be a physician. On the flimsy basis of carbon dioxide and Swedish gymnastics the reputation of Nauheim is founded.

Granted even that there ensues a transitory subjective well-being immediately or soon after a Nauheim bath or exercise, is there really a thinking physician who will maintain that lasting benefit to the genuine cardiopath will result from a course of the Nauheim treatment? I can assure you that the Nauheim physicians entertain no such illusion. Some go even so far as to declare, in private of course, that the treatment has no alleviating influence at all upon instances of organic heart disease. And they are in the right.

The proportion of German patients in Nauheim is comparatively small; as we say in the vernacular: they have smelled a rat. The "Kurgäste" recruit themselves to a large extent from the Russians, English, and Americans.

But few foreigners travel directly to a German watering-place. They are mostly referred by their home physicians or friends to certain well-known consultants in various cities, especially university towns. These gentlemen do the final apportioning; they may send a patient to this or that health resort, but he will always land in the office of a secret medical copartner of the great professor. Verily, medicine is commercialized in the Fatherland! Said the renowned Professor E. to a friend of mine (who practised for some years in Nauheim, but is now living in New York), when the latter visited him in Heidelberg in order to obtain a slice of his patronage: "Well, my dear L., I am glad that you have settled in Nauheim, but I cannot refer any patients to you; these I send to Dr. B., who divides with me."

The division of fees between certain "Badeärzte" and the referring consultants is an open secret; it prevails in all German health resorts in which there are more than half a dozen doctors. During the off-season many of the younger spa-physicians do detail work in their own behalf; they travel from town to town with cards or letters of introduction to this or that busy practitioner or consultant. And their business trips may even extend across the sea.

Not even among actors is there found so much jealousy and professional envy as exists among the physicians of a German spa. The one American physician practising at the time in Nauheim offered my friend Dr. L.—who, having been in active practice in New York City, naturally aspired to an American clientèle—a snug sum, just to get him out of the way, and to make him settle in Kissingen, in Bavaria. The high-priest of the Nauheim cult, grazing in this country in midwinter,—and he is certainly neither a youngster nor in need,—told everybody who wanted to hear it that there is but one God, and that *He* alone was his Mohammed. But he did not employ such choice language.

An American physician is permitted to practise in certain German health resorts, if not in all, provided he states on his sign and cards: graduated in America. There are at the present time, if I am rightly informed, five American physicians practising their profession in Nauheim. Attempts have lately been made to induce the Hessian government to withdraw this privilege to practise from the American physicians. Who, do you think, is behind this move?

Many go to Nauheim who never return alive. They are buried or shipped to the railroad station in the dark of the night. Day funerals are prohibited: they cast a gloom over the remaining cure guests, and one involuntary deserter of the ranks may undoubtedly make many a voluntary one.

Wiesbaden is a beautiful city. It is the most frequented of the German watering-places and the pensionopolis of Germany. Here, retired bankers, manufacturers, professional men, high government and military officers spend the rest of their days. The local medical profession has 200,000 people to practise on the year round; it does not need to drum up trade, and the Wiesbaden physician depends much less upon a business connection with the medical authority than his confrère in smaller health resorts. The local profession counts some of the most illustrious German physicians among its members. In matters medicoscientific Wiesbaden occupies a leading position. It is the perennial meeting-place of the German Congress of Internal Medicine. Fresenius, the celebrated water chemist, lived in Wiesbaden, and it was he who, through his analyses of the mineral waters of his native Taunus, first drew to them the attention of the modern scientific world.

Wiesbaden's well-known spring, the Kochbrunnen, has a temperature of 155.5° F. Its principal ingredient is sodium chloride. The Wiesbaden profession no longer is frenzied about its Kochbrunnen, but it is loath to kill the goose that lays the golden eggs. The Kochbrunnen, however, is still the fetich of would-be cure-guests,—that which lures them to Wiesbaden. Once there, Kochbrunnen or no Kochbrunnen, they are pretty well taken care of.

Wiesbaden abounds in mucous-membrane specialists of every type, and, though some of them prescribe the Kochbrunnen water in one form or another just to remind one of his presence in a watering-place, the real benefit for the patient accrues from treatment other than balneological. Some very good work concerning the pathology and treatment of gout has been done in Wiesbaden, but I never could fathom the causative connection between the mild sodium chloride spring and the cure of gout. In the treatment of gout the Kochbrunnen is a mere incident.

Aix-la-Chapelle (Aachen) is far-famed for its method of treating syphilis, but, while Aachen has the name, Wiesbaden has the game. Those of Wiesbaden have stolen the thunder of the Aacheners by using their methods, and the syphilitic clientèle of Wiesbaden is now actually larger than that of Aachen. Why should a man sneak to Aachen for treatment, which fact alone stamps him a syphilitic, when he can pose in Wiesbaden as one of the 50,000 sufferers from mucous-membrane disease who annually gather there?

As far as the cure-tax is concerned, Wiesbaden is more liberal than the

smaller spas. However, the custom that the townspeople pay 10 per cent. less than the cure-guests for everything they buy also prevails in this city with its nearly 100,000 floating population.

In Langen-Schwalbach one occasionally meets a patient who is almost as ignorant as her physician. Schwalbach is a ladies' bath, and the ladies are educated. A goodly proportion of them come from England. This lends an air of primness, or, rather, starchiness, to the place. Here we meet the lean, anemic girl and the young matron, chaperoned by enteroptotic mothers or angular aunts.

The reputation enjoyed by Schwalbach is due to its Stahlbrunnen, which exhibits 0.08 part of iron bicarbonate and 1570 c.c. carbon dioxide in 1000 parts of water. The town, situated at an altitude of 1042 feet, is surrounded by extensive forests. The cool and bracing mornings and evenings of the warm summer days undoubtedly contribute to the well-being of many of that species of English hot-house females who sojourn for a few weeks in the placid, tranquil resort. It goes without saying that a certain proportion of cases of uterine disorders dependent upon anemia are benefited by a course of treatment at Schwalbach, but it is the combination of change of surroundings, rest, bracing air, regulation of diet, hydrotherapeutic and balneological procedures in general, which brings about the improvement. The iron water alone would probably not accomplish much.

The great majority of the Schwalbach guests are real patients; they are not mortally ill, it is true, but they are a weak, nervous, morose, and disappointed lot. Quite a different tone prevails in the other German ladies' baths, in Elster and Franzensbad, which are mostly frequented by Germans and Austrians. Here the buoyant, if not exuberant, temperament reigns paramount. Thither many ladies—by no means all of them—come for the avowed purpose of losing their "sterility." And the local members of the profession are no fossils; they do their duty as they see it, and the husband pays the bill.

In Schwalbach, on the other hand, the old Sanitary Counselor pats the shoulder of the departing female, still anemic and probably a trifle more fidgety than when she arrived, uttering the consoling and prophetic words: "It is true, you are not quite recovered; but a Nachkur (after-cure) at X— will surely get you all right; if this should not be the case, you will most assuredly be entirely well when you have been home for two or three weeks."

Homburg is the most fashionable of German health resorts, and, incidentally, the most expensive. Here they have two sets of springs: the one, whose main representative is the Elisabethbrunnen, contains large amounts of carbon dioxide, the same amount of common salt as the Nauheim spring, and in addition some calcium and iron bicarbonate and lithium chloride; the other, represented by the Stahlbrunnen, contains, in addition to iron bicarbonate, some common salt and goodly amounts of carbon dioxide. The springs do not differ so much in their character as in the proportion of their constituents. This little peculiarity of nature is utilized to attract two types of patients; those who are affected with gastrointestinal and metabolic disturbances, and those who are suffering from the consequences of anemia.

For many years Homburg has been a resort of the English aristocracy. The German public in general knows very little about the place. Really sick people hardly ever go there. A renowned internist, famous pre-eminently for his money-making proclivities, who had lived for a long time in the neighboring city of Frankfort has tried his utmost to make Homburg, so to speak, a cross between Kissingen and Carlsbad. He failed. Homburg is not sufficiently a freak of nature as to attract real life patients without so-called scientific work on the part of its physicians. These are self-contented; they have not created a specific Homburg system of treatment for the simple reason that they do not need it. It is a pleasure to practise in Homburg, and a recreation. There, one never wears his working clothes. The duties are light, the fees high, the chances great,—the chance to become a duke's private physician and to travel to all the corners of the world, or to conquer a little English maiden with a stringless purse. But the practice of medicine is of secondary importance at Homburg.

Health resorts may serve a good purpose. They remove the patient from his usual surroundings to a salubrious environment; they form an oasis in this life of drudgery and suffering. Their mineral springs, even, may be of some use to some patients, but they are not essential. In fact, many a patient recovers at a spa in spite of its waters.

Fake promises and fake practices must be suppressed as we suppress fake medicines. The fake sanatorium with its eccentric dietary and pseudoreligious atmosphere has no place whatsoever in the honest practice of medicine. It is these and the railroad companies, exploiting every spring of tepid water along its lines as a cure-all, that are preventing a natural development of spas like our own Saratoga.

CONSTIPATION WITH DIARRHEA.*

By ALBERT BERNHEIM, M.D.,

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The evacuation of the bowels depends upon a regularly recurring contraction of the colon and rectum. In the small intestine the propulsion of the contents is comparatively rapid, so that they reach the ileocecal (Bauhin) valve in about four to six hours; but the propulsion in the colon is gradual and slow, undoubtedly owing to peristaltic and antiperistaltic influences. That antiperistalsis is present we have learned through Cannon's investigations, as well as through those of Nothnagel, Grützner, and others. At the meeting of the American Medical Association held in Atlantic City, 1900, the writer made a report of some investigations relative to the movements of the intestines.

* Read at the Fourteenth Annual Meeting of the American Gastroenterological Association, held in Philadelphia, Pa., April 20, 1911.

Peristalsis is dependent not only upon the regular systemic nerves, but also upon occasional reflexes induced by impulses of various kinds (fright, joy, emotional excitement, irritation of the skin, etc.). The particular form of peristalsis which induces evacuation of the bowels is a periodical one, and occurs under normal conditions usually once in twenty-four hours. Its advent often depends upon the habits of the individual, since even in quite normally healthy persons this periodical evacuation may occur twice or thrice a day, or only once every two or three days. Cases are known where in persons appearing otherwise absolutely normal a bowel movement occurs even only once a month (I personally knew of a colored man who belonged to this class). At the meeting of the Mississippi Valley Medical Association in Nashville, Tenn., October, 1898, the case of a healthy railroad engineer was reported, who had a bowel evacuation but twice a year; as a consequence he was obliged to leave his work every six months and became severely ill for about a week. All these aberrations from the normal belong to the subject of habitual constipation, although they may not be classed as pathological.

I will not discuss habitual constipation in general, but consider only certain varieties which I have found often associated with diarrhea, sometimes alternating with constipation.

Cases of this kind are not very rare, if we examine them correctly. We find them in gouty patients, after operations for abdominal and rectal conditions, in tuberculosis of the lungs, in cases of achylia gastrica, and often in cases of hypochlorhydria with atony of the stomach and intestines; in hyperchlorhydria, on the other hand, we find genuine constipation. Until a few years ago I made a distinction between hyperchlorhydria and superacidity in the sense that I thought constipation was observed in cases of organic superacidity; but upon more thorough investigation I recognized that even in the latter cases there exists constipation which is only masked by more frequent evacuations.

By color tests carried out by means of the internal administration of fuchsin I found that, in a number of the cases mentioned above, the elimination of the fuchsin through the urine apparently ceased before its elimination in the feces. Originally I used the "fuchsine médicinale" in cases of tuberculosis of the lungs with large amounts of sputum. I wanted to ascertain whether the tubercle bacillus could be stained within the human body, considering that there might be a particular affinity between the bacillus and fuchsin; I was not wholly disappointed in this respect, although it takes tedious work to find, occasionally, the but feebly stained bacilli. In connection with this work I had at various times found that stained food remnants remained in the intestine for an abnormally long time in spite of the existing diarrhea.

In many of the cases of diarrhea which came under my observation, I found all the usual symptoms of habitual constipation, symptoms partly such as those attributed to autointoxication and vasomotor ataxia, viz., headaches, dizziness, drowsiness; indefinite pains more or less all over the body; loss of ambition; frequently chronic catarrhal conditions of the nose and pharynx; tachycardia; in other cases heavy and slow pulse; in some cases frequent

micturition. In a number of young girls and women there existed pronounced symptoms of chlorosis; these were not relieved in spite of the administration of iron, the diarrhea continuing.

The diarrhea manifested itself in various ways: Sometimes there was one evacuation, sometimes as many as ten or twelve, during the twenty-four hours; evacuations occurred but seldom during sleep. Usually the volume of each stool was small; the consistency of the feces varied from watery to a soft, mushy, and curd-like state.

For illustration I wish to present a few case reports:—

I. Young man, 17 years of age, worker in a machine shop, had been operated upon for appendicitis. A few months after operation patient came under my observation. His chief complaint was diarrhea, with 6, 8, or 10 small evacuations a day. He had been treated with various antidiarrheic drugs; for a day or two these might prove successful, only to be followed again with frequent evacuations. Patient had been regular in his bowel movements before the operation, as he claimed.

On questioning him I found that he occasionally had colicky pains in the appendix region; on physical examination, a swelling was found in the ileocecal region, and without the history of the operation the most logical diagnosis would have been chronic appendicitis. By deduction I decided upon the diagnosis of obstruction in the bowels through adhesions resulting from previous inflammatory processes or from the process of healing after the operation, with concomitant atony of the colon. Treatment: Rest in bed for a few days, and Priessnitz packs. An oil-emulsion enema brought forth old, blackish fecal masses. This, followed by calomel and sulphate of magnesia, seemed to give patient a new and clean bowel to work upon.

II. Woman, operated for uterine tumor. A few weeks later patient had an attack of diarrhea which, together with other symptoms, suggested typhoid fever. Full and complete evacuation of the bowels changed the condition promptly.

III. Man, operated for hemorrhoids, complained shortly after of distressing diarrhea. In this case again high irrigation with oil enema and an oil-emulsion enema brought forth large fecal masses. On an appropriate diet the patient gets along very well.

IV. Young girl, anemic, much emaciated, had frequently taken iron preparations, and in spite of these was troubled with frequent diarrhea. Only after rest in bed and a thorough evacuation of the bowels did the iron preparations yield the desired result; patient gained twenty-four pounds within three months.

V. Woman, a morphine habituée, gradually got to take as much as 10 grains of morphine. Diarrhea was almost the rule; nevertheless, on administration of laxative mineral water and rest in bed, with application of wet packs, large stools were evacuated.

VI. Similar conditions obtained in the case of a man who had learned to eat opium while in California among Chinese. At times he took as much as a dram of opium a day. Here also diarrheic stools were the rule.

Constipation with diarrhea was found in a number of patients whose chief complaint consisted of attacks of genuine gout, as well as in persons exhibiting signs of an arthritic condition of small joints.

VII. A case particularly illustrating the cure of gout has been reported orally by Dr. Strittmatter. The patient, suffering severely from this affection, was operated for a large incarcerated hernia. The colon, which was very long, had to be resected

on account of gangrene. Before the operation constipation alternated with diarrhea. After the operation patient was cured entirely both of constipation and of gouty attacks.

VIII. Man, 42 years of age, showing the well-known symptoms of autointoxication; distinctly neurasthenic; had been treated for some time for chronic throat conditions, but with little effect. He consulted me for his intestinal condition, chiefly diarrhea. After thorough examination by gastric test-meals, which did not yield anything abnormal, I made a rectal examination, and found but slight hemorrhoids, but the rectum full of fecal matter. An oil-emulsion enema softened the fecal matter so that it could be flushed out. In this case an interesting fact was disclosed in that the rectum must have been abnormally large, since a large rectal tube 60 inches long could readily be rolled up in it. This happened once when the nurse thought he had introduced the whole tube far up into the colon. This excessive capacity, no doubt, was the cause of the retention of feces.

The treatment of these cases is the treatment of constipation, and is as variable as the causes of constipation may be variable.

The chief treatment ought to be the *prevention* of constipation. In operative cases I believe the avoidance of packing the laparotomy wounds with gauze is the principal desideratum; the large amount of gauze used often sets up excessive irritation with resulting overgranulation and subsequent fibrous organization, bands being formed and consequently kinks. In other operative cases, *e.g.*, in operations for rectoanal conditions, a more thorough and accurate dissection of the various membranes to be excised should take place.

Other prophylactic measures include the avoidance of overadministration (by the physician as well as by the patient himself) of purgatives; avoidance of ingestion of excessive quantities of water, as indiscriminately advised by faddists and *via* woman's pages in magazines and newspapers; avoidance of fads in food, diet, and physical culture, especially overexertion in women, who are preached to in newspapers to walk five or ten miles every day. Many cases of constipation are due to "too much diet and not enough to eat."

Another instigating factor of constipation, and one easily avoided, is that resulting from the unreasonable stand which the teachers in public schools too frequently take toward the pupils who ask to retire.

A further cause of constipation depends, as is well known, upon the almost universal use of laxative pills; the number of these preparations is so large that we could not mention all their names.

Medicinal treatment may become necessary in a given case for a short time—and we should then give a medicine which really does clean the intestinal tract. The best procedure in my opinion is the administration of a few (3 to 5) large doses—2 to 5 grains—of calomel, followed by a laxative salt—magnesium sulphate or sodium sulphate, or a mineral water containing the same ingredients.

In other cases we can make effective use, for a short time, of one or the other laxative or purgative drugs. Our old-fashioned oleum ricini has its uses, but it should be given in small doses (half a teaspoonful to a teaspoonful) two or three times a day and continued for about a month, frequently with the same amount of best quality olive oil.

In cases with excessive fermentation ichthyol has also been of great value in reducing fermentation and with it atony.

The physical treatment in the above cases of constipation with diarrhea consists in the administration of oil enemas, oil-emulsion enemas, hot baths with massage (the latter carried out by the patient or better by an attendant), the Priessnitz Umschlag overnight, or hot wet packs changed every fifteen to thirty minutes. The packs are especially useful in cases where colicky pains or tenesmus are present. In connection with them rest in bed is of the greatest value; rest alone, particularly in overexercised and overworked patients, is sometimes sufficient to attain the desired object. Another mechanical method which is very effective in appropriate cases of constipation is lavage of the stomach.

The dietetic treatment I have already mentioned while speaking of prophylaxis.

Good, well-prepared food, and a variety and plenty of it, is of the greatest importance. It is impossible to prescribe for all patients the same dietary *régime;* here, if anywhere, we have to individualize and try out the one and the other food.

A cup of good, strong black coffee, with plenty of sugar, has often yielded excellent results; so has a glass of good beer or of cream; bread spread with butter and honey, on both sides if necessary; stewed fruit, dried fruit (soaked overnight in clear cold water), various kinds of cheese, agar-agar, besides many other food substances which must be adapted to the individual case.

In regard to hygienic treatment, I shall merely briefly mention: Moderate exercise alternating with rest, fresh air, salt baths, sitz baths, sensible wearing apparel. A correctly fitted corset is rather helpful than harmful.

In bringing this paper before the Association I have not been actuated by the fact that these conditions are very rare or little known, but rather by the fact that they are overlooked by many practitioners, that drugs are frequently prescribed without examination of the patient, and that, owing to this sort of negligence, many patients lead for weeks and even months a life of distress which makes of them neurasthenics and neurotics.

THE TREATMENT OF PARASYPHILITIC CONDITIONS WITH SALVARSAN.

BY ESTILL D. HOLLAND, M.D.,

HOT SPRINGS, ARK.

SALVARSAN is one of the few drugs possessing almost unlimited unexpected virtues. Its use affords a series of gratifications to the patient and the physician, and as we become more familiar with its employment it more and more nearly approaches the ideal it was at first supposed to be. Whereas at first it was thought an absolute specific in a very limited number of diseases, it is now known to be of benefit in a great many different conditions.

There are no conditions in which the use of salvarsan has been a greater surprise than in the treatment of parasyphilitics. Indeed, we believed the parasyphilitic conditions to be more or less of a contraindication to its use. We now realize that in them we obtain some of our most gratifying results.

At first we were skeptical as to the advisability of using salvarsan in these affections, with the result that, although we have given it to over 300 syphilitics, we have used it in only a few parasyphilitics. I will report these cases in full in the order in which we treated them.

CASE I.—Mr. W., aged 43. Had chancre in 1899, followed by the usual secondaries. Took treatment at the time and for some months following, and had not been bothered for several years with any symptoms until he suffered a paralytic stroke in December, 1909, from which he was confined to bed for several weeks. Came to Hot Springs in February, 1910, exhibiting all the symptoms of the maniacal stage of general paresis. We immediately put him on the mixed treatment, giving the mercury by inunctions and injections. Patient was soon able to walk and could talk thickly, but was extremely nervous; he would cry at the slightest provocation and would fly into a tantrum from the most trivial cause, or from no cause at all. He talked very indistinctly and would get so excited upon trying to carry on a conversation that he would lose all control of himself, and either cry or become angry. Patient had a crisis at least once a day, during which he would attempt to injure himself by bumping his head against the wall or a door, and the presence of any member of his family would only aggravate the condition.

Patient remained in Hot Springs for six months the first time, and, although his general health improved, the tantrums continued. He stayed at home a few weeks during the summer of 1910, and returned to Hot Springs that fall in about the same condition as when he left. We started him at once on the mixed treatment again and, by keeping him saturated, could keep the disease from progressing, but could not make any appreciable impression on the existing symptoms. He still had his tantrums every day and sometimes oftener than once a day; if he could not get to sleep for ten or fifteen minutes after going to bed, he would get nervous and have one of his spells. Hypnotics were required every night. On February 17, 1911, we made a thorough examination for contraindications and, finding none, gave him 0.6 Gm. of salvarsan intramuscularly. On February 18th, the patient's temperature reached 100°; he complained of pain in the hip, at the site of injection. The temperature never went above 100.5°, and the patient was up and around the fourth day.

The most marked change noted was his entire freedom from tantrums or crises, as he did not have a single one after taking "606." His nervousness gradually became less, and by March 25th he was able to walk without a cane, carry on a conversation without losing control of himself, and lie in bed at night for two or three hours without getting nervous.

A Noguchi test, made March 25th, was negative.

This patient continued to improve until he was able to resume his business in August, 1911. He seemed to be quite normal mentally, and shows a well-established co-ordination.

CASE II.—Mr. J., aged 32. Contracted syphilis in 1904, for which he was treated about six months. In the fall of 1910 he noticed an unsteadiness in his gait, which grew worse until it was noticed by railroad officials, causing him to lose his position as engineer on one of the big roads.

Patient was seen first on May 20, 1911, when he presented all the symptoms of tabes dorsalis in a well-advanced form. He walked with a cane and watched his feet constantly while doing so. Finding no contraindications in the condition of his vital organs, I gave him a full dose of salvarsan intramuscularly on May 23d. He

had a fairly strong reaction, temperature reaching 101° on the 24th, but left the hospital feeling well on the 26th. I gave the patient vapor baths for a week and allowed him to return home, as he could not stay any longer.

Patient wrote me frequently that he was better, and on the first of September sent me a sample of his blood, which I found weakly positive to the Noguchi test. He said that he was walking without a cane, could read without his glasses, seemed to have no more trouble in walking in the dark than he had ever had, and had passed an examination as railroad engineer and was working for another road. I realize that some railroad examinations are very lax, but this man must have improved a good deal to escape notice from the most careful observer. Of course, he is not well, but is able to work, knows he is better, and feels encouraged, and I believe that with proper treatment he would entirely recover.

Case III.—Mr. J. C., aged 40. Contracted syphilis in 1906. Had a stroke of paralysis two years ago and was confined to bed for three weeks. Came to Hot Springs in the fall of 1910 and began a very vigorous mixed treatment, which he continued without any marked results until June, when I first saw him. Patient was very ataxic. He walked with a cane only with difficulty. All the symptoms of tabes dorsalis present to a marked degree. He had incontinence of urine, and a chronic constipation requiring the use of drastic purgatives. Finding no contraindications, I gave him a full dose of salvarsan intramuscularly, on June 7, 1911. He had a pronounced reaction, with chilly sensations and a temperature of 100.5°, but was able to leave the hospital the third day and return to his hotel. Patient began to improve almost immediately and by June 20th had discarded the rubber sheet that he had slept on for over a year, as he could control his urine long enough to get to a urinal. He continued improving until, by July 1st, he could walk very well without his cane.

I made a Noguchi test, and, finding it positive, gave him a second injection intravenously on July 10th. Patient had a very slight reaction to this injection and only remained in the hospital one night. He left Hot Springs in October, 1911, having gained 18 pounds, walking without a cane, reading for long periods at a time without any effort, and having required no remedy for constipation for seven weeks. His Noguchi reaction was negative. I heard from this patient in December, 1911, when he stated that he was continuing to improve, was able to take long walks, slept perfectly, and arose entirely refreshed in the morning. I hope this man is cured, but he certainly owes a debt to "606" whether he is or not.

Case IV.—Mr. S., aged 51. Has had syphilis for over twenty years. Ten years ago began to notice a difficulty in walking in the dark. Was examined and told he was developing locomotor ataxia. Came to Hot Springs to take treatment. Patient followed treatment very irregularly and became constantly worse. I examined him for the first time in the spring of 1911, and found all the symptoms of tabes dorsalis. Patient had been having shooting pains for several years, but they were becoming more and more frequent, until during August and September they were almost constant, with crises coming on two or three times a month, which required morphine in large doses to control. Patient was run down, very weak, and anemic. He was constipated and could not digest his food. Had girdle pains, and, in fact, was a typical case of advanced locomotor ataxia. On October 25, 1911, I gave patient a full dose of salvarsan intravenously, as he had tried everything else and was getting worse so rapidly that something had to be done and there was no time to try to build up his general condition.

Patient had a pronounced reaction to the drug and suffered greatly from shooting pains for several days. Every ache and pain he had ever had seemed to revive, and, although he was able to attend to his business in three days, he was very miserable and continued so for two weeks, when he had another crisis, which required the use of morphine. By December 1st patient was looking better, had gained 5 pounds, was free from the pains, and had a fine appetite, with no trouble with the digestion or

constipation. Today (January 11, 1912), patient is back to his normal weight, has not had a crisis in over two months, and no longer has the shooting pains at all.

I consider the result in this patient almost a miracle, as he was physically unfit even outside of his specific condition. Nothing else would have given him such prompt relief, and do not believe that he could have lived long enough to respond to any other treatment, provided that anything else would have relieved him.

CASE V. Mr. M., aged 42. No history of syphilis. Began having trouble in walking about seven months ago; also noticed that his eyes did not focus properly. Arrived in Hot Springs the latter part of December, 1911, and had a Wassermann test made, which proved slightly positive. Patient came to see me December 28th, and, finding all the symptoms of tabes dorsalis and no contraindications, I gave him a full dose of salvarsan December 30th. Patient had a slight fever at 4 P.M., but felt so well that he insisted on dressing and going down to the hotel lobby that evening. I allowed him to do so, and he felt perfectly well the next morning.

On January 1st, patient said he no longer had any dizzy feelings, and that his eyes felt much stronger. By January 12th he could walk with a firm step, did not even carry a cane, had gained 6 pounds, slept and ate well, was not constipated, and on the whole felt like a new man.

This patient was a surprise to us, as we had told him that he would not notice much improvement for two or three months no matter how well the treatment succeeded, and we can only explain his sudden recovery on the supposition that, instead of being destroyed, the nerve tracts were only inflamed, and that as soon as the etiological factor in their inflammation (the *Spirochæta pallida*) was removed the inflammation subsided and the nerves resumed their function.

His objective symptoms remained about the same as before, with the exception of the ataxia, which is greatly diminished, but it will not be a surprise if most of them disappear within a short time.

CASE VI.—I have treated another patient, Mr. C., for tabes dorsalis, with salvarsan very recently, but the time elapsed has been too short as yet to notice any change in him. He took the injection at noon one day and was at my office the next morning at 9 A.M.

These represent all the cases of tabes dorsalis that we have treated with salvarsan, but our uniformly good results have convinced us that tabes is one of the many conditions in which this remedy is indicated.

We have given over 300 patients "606" in the last year without a single undesirable result or complication. Whereas we began its use with a good deal of skepticism, that was soon overcome. We are no longer surprised by its action, but are continually being delighted by its manifestation of new virtues.

We give the neutral suspension intramuscularly in one hip, and the intravenous injection with our modification of the Boehm gravity apparatus. A 240 c.c. solution containing 0.6 Gm. of salvarsan is used and the patient given 1½ c.c. for each pound of his weight. If the weight exceeds 160 pounds, we use more salvarsan, keeping the concentration the same.

We try to have the patients take a few baths before taking "606" with the view of getting their eliminatory organs in the best of condition, and insist

on a short course of hydrotherapy following its administration, for the purpose of eliminating the drug and the waste products of the germs. The fact that we have had *no* bad results, while a great many observers elsewhere have had them, leads us to think that our hydrotherapeutic facilities are by no means unimportant.

We have proven to our satisfaction that the reaction of a patient to the intravenous injection of "606" is due to the toxins liberated by the dead spirocheta. Consequently, the more marked the reaction, the more active the infection has been. A man who is not infected with syphilis will not give any reaction. We have gone to a great deal of trouble to prove this, but the process we have followed is too elaborate to be described in this paper.[1]

ON HAY ASTHMA: ITS SYMPTOMS, TREATMENT, AND ETIOLOGY.*

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Hay fever begins with a sudden access of sneezing, with fullness of the nose and throat and an abundant discharge of watery mucus. Owing to swelling of the nasal mucous membrane, the breathing soon becomes oral. The eyes become congested, the lids swollen and red, lachrymation is increased, and there is mild photophobia. The external nose, likewise, is swollen and red, the face puffy, and the eyes less prominent. Taste and smell are impaired, and from this the appetite also. From the nasal hyperemia and infection, the engorgement of the mucous membrane spreads to the accessory sinuses of the nose, to the pharynx, soft palate, uvula, tonsils, and larynx, the results being inconvenience in swallowing, tickling of the roof of the mouth, irritative uvular cough, and huskiness of the voice, even to aphonia.

The oppressed breathing, nasal discharge, sneezing, and coughing, annoying enough by day, are intensified at night, which is restless or sleepless. The patient is disturbed and harassed. He becomes indolent, disinclined to work, irritable in his mood, and dispirited. He relinquishes his occupation, remains indoors or in bed. He either quickens the sympathy of his household or is the subject of humorous look or speech at the intensity of his lament or suffering.

While the pulse shows no variation, a slight fever may be found.

This is the picture of a severe coryza or acute rhinitis, from which hay fever differs, however, in its duration, its complications, prodromes, and sequelæ, its periodicity, and its disputed origin.

Hay fever lasts from one to four weeks. The greatest number of cases appears like an endemic at the middle of August, returning with precise regularity each year. It is a medical and popular belief that hay fever terminates for a time when the colder weather of frost is felt.

[1] The case of Mr. W. (Case I) has already been reported, but not in full.

* Read at a meeting of the Therapeutic Society of the District of Columbia, November 4, 1911.

The *complications* of hay fever are numerous, and give a diversity of form to the primary infection. These, when latent or locally inactive, may render the disease for a time obscure and cause it to pass unrecognized or misnamed. Among these complications are to be found: Neuralgia of the head or face, especially of the first division of the fifth nerve; conjunctivitis, uni- or bi- lateral; erythema or eczema of the face; urticaria and pruritus, local or diffuse; bronchitis, acute or subacute; bronchial asthma, not of the severest type, but with night attacks of dyspnea. From the bronchitis and asthma there is increased susceptibility to the appearance of a pneumonia or pleurisy. As a further result of the asthma, there is a tendency to weak action of the heart or to its dilatation.

There is always a neurasthenic manner or habit, and more or less languor and debility, with loss of weight.

Among the *prodromes* appearing most frequently in the spring, viz., in April and May, are: Epistaxis and hemorrhoidal bleeding recurring annually; periodic sneezing and rhinorrhea; irritative cough, and bronchial asthma. In children at puberty or before, the asthma may not present the spasmodic stage, but be represented by inability to lie down at night with gasping at breath, and in the daytime by deep inspirations or sighing coming on spontaneously or after muscular effort.

Finally, an abdominal or intestinal neuralgia simulating renal colic may be found in these earlier months of the year.

It is a characteristic of these associated diseases and prodromes that when they are active the peculiar coryza or rhinitis is absent or causes but slight annoyance. We are obliged, therefore, to identify the hay fever as the fundamental cause, either from the previous history or by questioning the patient as to symptoms of disturbed nasal function. On rhinoscopic examination there will always be found either the angry redness of an acutely inflamed membrane or the pale, swollen, and relaxed appearance of the mucous membrane of the turbinal bodies, more or less peculiar to hay fever, and similar in appearance to nasal polypi. As a result of this same morbid state, small indolent ulcers may be found, which bleed but slightly and tend to scab formation.

The *diagnosis* of hay fever is readily made as long as the nasal symptoms are active and the season is considered. The appearance of the face is singular enough to make the nature of the trouble a strong presumption. The humid eyes and swollen lids, the red and swollen external nose, the thickened alæ, the red blush spreading to forehead and cheeks, the stuffy voice and mouth-breathing, the irritability of the subject, are peculiar and unmistakable.

The diagnosis is not so speedy or easy where, as has been said, a complication or antecedent predominates, and where there is not, or has been, any complaint or knowledge of a coryza. If, however, inspection of the nasal fossæ is not omitted, the case becomes clear and is quickly identified, and the observer is impressed with the belief that hay fever is much more common than it is usually held to be; that sporadic cases can be found at all seasons, even in winter, and that sneezing and running at the nose need not be the main or only symptoms of this singular malady.

Hay fever has been mistaken for other diseases, even for typhoid fever or acute pulmonary tuberculosis. In children it has been confounded with adenoids of the nasopharynx. Frequently enough by the laity it is taken to be a cold in the head. Acute coryza and hay fever are closely related, and it is difficult to differentiate mild or latent hay fever from rhinitis. When prodromes or complications appear, however, all likeness ceases. Inspection of the nasal fossæ may or may not distinguish them, even though hay fever be a vasomotor paresis, easily recognizable from inflammatory coryza.

The question is often asked by those about a sufferer in the active stage, if it be contagious. This has not been considered by medical writers, although the subject has been abundantly studied, discussed, and written upon. Heredity is considered to be a frequent factor, *i.e.*, we may see a hay-fever parent with children having the same disease, or paroxysmal sneezing, or hay asthma; yet, in these instances transmission by contact may be a more direct and potent cause than inheritance. In the domestic life of a married couple, an acute attack in the husband will often be followed by a coryza or other form of the suspected disease in the wife or children. Individuals together much of the time or occupying the same sleeping room or bed will declare that the catarrh was contracted from their companion or associate.

Further, as there is no doubt but that an acute cold in the head can be conveyed by direct or indirect contact, this in itself makes the assumption that hay fever is mildly contagious seem very plausible. This will some day be determined when the essential agent in both diseases shall have been identified.

The *treatment* of hay fever is simple and efficient when the indications are clearly held to be the palliation of the irritated nasal mucous membranes and their disinfection, the recognition of hay asthma or other severe complication, and its appropriate medication. The local use of non-irritating antiseptics and germicides has been variously and most successfully applied. Such a treatment as described by Hollopeter in his book on hay fever seems very successful. Yet, it is tedious and time-consuming, so that it must remain exclusive and limited.

An agent which the writer has found to be prompt and efficient is the solution of calcium creosote, diluted with 8 to 10 volumes of water, with which the throat and nasal fossæ are sprayed every hour or two for two or three days. The diluted solution should be free from any irritating or painful effect, and should distinctly soothe the parts. If the latter does not occur, a further dilution of the liquid may be required. With the persistent use of this simple method the local disease is arrested and made to recede. Contiguous, diffused, and reflex irritation ceases, and the patient's state rapidly returns to the normal. The involvement of the eye, pharynx, larynx, and face needs no other treatment than the above. The neuralgia also vanishes spontaneously.

Hay asthma must in every case be held as demanding prompt and close medical attention, while disinfection of the upper respiratory tract with the spray should always be made a part of the treatment in hay fever, even though the nasal disease is latent or inactive; yet, asthma from any cause is worthy of serious notice. In hay asthma potassium iodide in small doses—5 grains three

times a day—can well be considered a specific, and the instance is rare indeed where a cure does not result from its use in a week or two. An opiate at bedtime for a few days expedites this by giving sleep and rest to the labored breathing. Arsenic in small doses increases the efficiency of the iodide.

The *etiology* of hay fever is a fascinating mystery which one cannot consider without interest and attention, surrounded, as it is, like the medical history of some other diseases, with ingenious, but discordant views. The charm about the whole subject will condone some honest skepticism and unbelief. Dr. Wm. Pirrie, in 1867, expressed the opinion that hay fever is a disease of nervous origin. Sir Andrew Clark, in 1887, held that there are three causative factors,—pollen, neurotic habit, and morbid nasal mucous membrane. E. W. Holmes, in 1897, called the disorder a neurosis. G. M. Beard declared the neurotic habit to be an essential factor. Sajous attributed the disease to hyperesthesia of the vagal center and termed it "hyperesthetic rhinitis." Solis-Cohen and Samuel Ashhurst maintained that it is an idiosyncrasy.

That a neurotic temperament or idiosyncrasy is an important predisposing or predominant cause seems to be based on faulty observation or reasoning. That the coryzal stage and symptoms engender a highly nervous, impatient, and excitable state is very apparent to those who have often treated this affection. That nervousness or neurasthenia should, however, cause hay fever in any case, or that hay fever should appear only in such persons, is too vague and is contrary to fact. Furthermore, it is not a disease of privilege in the gifted, educated, or opulent city dweller, but is plentiful in the phlegmatic, illiterate, and lowly. In the former class there is more clamor; in the latter, more resignation. Moreover, we find the victim highly neurotic from his distress and impatient of control or treatment who at other times is not at all nervous and the tenor of whose life contradicts such an imputation. Following is the opinion of Grayson, as quoted by Hollopeter: "The neurotic habit may exist, but is not essential to the disease, and the nervous system is implicated as a victim, not as a culprit."

This occult neurosis is further manifested by the phenomena of susceptibility as dependent upon an unstable vasomotor condition of the respiratory tract. The changes which the latter undergoes of turgescence and relaxation or paresis, incited by a local irritant, produce all the symptoms of nasal hay fever and of hay asthma. This vasomotor weakness may be found in nerve-centers, specifically in the olfactory and trigeminus areas, or even in the sympathetic system. Again, the condition might be primarily a vasomotor ataxia or idiosyncrasy, or else an organic alteration of nerve-fibers in the affected region.

The phenomena arising in the cavernous nasal tissue indicate a vasomotor disease. The nasal mucous membrane does not present the features of an acute inflammation. The blood-vessels are engorged; the erectile tissue, distended. The mucous membrane is crowded with wandering leucocytes, younger epithelial cells proliferate, and secretion is greatly increased. The metabolism of the affected region is profoundly deranged (Hollopeter). The appearance of the

mucous membrane only slightly suggests an inflammatory process: it is much swollen, but is grayish, instead of bright red as in rhinitis.

Whether this be a passive state of inaction from a local paralyzant effect or whether the concomitant involvement of the eyelids and throat is an active hyperemia, a true inflammatory process in the first stage may be decided in one or the other way according to which view is advocated or maintained. If it is recognized in hay fever that there may be a constitutional elevation of temperature, that the whole primary process is a rhinitis in the stage of active congestion, that the diffused local disturbances are inflammatory, and that the origin of the malady may be microbic or of a toxic poison, the local reaction is to be considered inflammatory, and not a stasis or paretic relaxation.

Of all theories of the causation of hay fever the essential and favorite one, with all supporters and no unbelievers, is that it results from the inspiration of the pollen of plants. Conceived by Elliotson in 1833, this theory has since been very popular and is approved by all writers.

This view, to maintain itself, is compelled to assign the etiological agency to many grasses and cereals and to many varieties of indigenous and ornamental plants, varying with different countries. It further requires the pollen to be derived from different sources, according to the season. It explains sporadic hay fever through the fact of some pollen being found all the year round, and Blackley, with his experiments, showed that there is most hay fever when most pollen is inspired. The crudity of this view was jarred by the ingenious protest of W. F. Strangways, who showed by computation that there is not enough of gross pollen in the atmosphere to supply the irritant to produce all the cases of hay fever. To explain the deficiency without relinquishing the agency of pollen he assumed that in pollen there is a protoplasmic substance acting as a ferment and producing a toxin which is the true cause of the symptoms.

W. G. Dunbar[1] has perfected and demonstrated this hypothesis. He isolated this substance as a specific toxalbumin which remains active at 120° C., but is destroyed at 150°.

This toxin is so active that the product of a few grains of pollen will induce the essential symptoms of the disease. The hay fever in the United States is caused by goldenrod and ragweed, but not so the disease found in Europe. The spring hay fever comes from 25 graminaceæ and 8 cyperiaceæ, as well as from other plants, such as the cabbage, spinach, thistle, and lily-of-the-valley. In the autumn form 11 other plants were found active.

The toxin, applied locally, produces the catarrh, but when it is injected hypodermically extraordinary and terrifying results appear. Its action begins in ten minutes; the asthma, in sixty minutes. At the seat of injection there is a spreading edema. This and the turgid face persist for some days. The temperature and urine remain normal. Exhaustion, with palpitation of the heart, continues for a week.

The pollen toxin is a genuine toxin like that of diphtheria, but is ther-

[1] Osler's "Modern Medicine," vol. iii.

mostabile. The normal subject is indifferent to it. The susceptible, on the other hand, develops all the phases of hay fever under its influence.

A pollen antitoxin from horse serum, used daily in minute doses, has given the following results: 56.1 per cent., excellent; 30.7 per cent., partial; 13.1 per cent., none at all.

There is much likeness between acute rhinitis and hay fever. The former is an acute infection with catarral symptoms and fever, occurring most frequently in the spring and fall. In the autumn almost every one catches a "cold in the head"; not so in winter or summer. The cause is a microbe, special or common, yet awaiting its detection. It is markedly contagious and spreads in a family. It debilitates, has numerous complications, recurs annually, and seizes on both young and old.

Hay fever may be briefly summed up as follows: The pronounced nasal disturbance causing neurotic agitation is not found in many cases. A mild coryza, not felt by the patient, is overshadowed by the cough and debility, the bronchitis or hay asthma, and the neuralgias, cutaneous manifestations, or other adventitious phases. Hay fever is febrile and contagious, either in transmitting the disease in a typical form or as a simple rhinitis. Finally, the most promptly acting and efficient treatment is that by local antiseptics and germicides.

For these various reasons it would seem that the pollen theory is incompatible with our knowledge of almost all other diseases, contagious, endemic, or epidemic, in all of which specific pathogenic microbes must be considered as the sole and ultimate cause.

REMARKS ON THE TREATMENT OF CHRONIC DISEASE.*

With Special Reference to Simple, Efficacious Remedial Measures Readily Applied, but Often Neglected.

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"There is nothing which so conduces to length of years as an incurable malady."—*Oliver Wendell Holmes.*

Many effective methods are known for relieving and curing chronic disorders. Some are better than others, but the best are no better than the worst unless pursued with consistency, persistency, and, above all, appreciation of the physiologic factors involved.

All remedies for diseases are valuable in proportion as they render available inherent self-protective and self-reparative powers. The body, moreover, is a concrete, living entity, not made up of separate parts, like an insentient machine, any one of which is capable of acting and reacting independently of

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the rest. In the sentient human machine, wherever there is local damage or derangement this can be removed only by eliciting the full co-operation of all the component mechanisms, and being aware of the interdependence of every part. Nowhere is the significance of this co-operation of all parts more direct and important than in the treatment of protracted disabilities, and for many reasons. Among these is that, whereas in traumata—fractures, wounds, and other strictly localized damagements—the remainder of the organism is presumably at the time in a state of full integrity (hence, with full capacity for prompt and complete repair), conditions are quite otherwise in protracted, long-prevailing disorders; the results are manifest in slow, but steady disintegration of tissues,—in the retroaction caused by depression in both the psychic and physical spheres of activity. Unless the individual is regarded as an all-round well-balanced organism, with full consideration of all the essential factors constituting health (not forgetting permissible variants), the best results cannot be attained, either in conservation or repair.

In acute disease, notably the infections, there is fever, a defensive process whereby the autoprotective forces are aroused to the performance of their most perfect work. Much can be done to control and direct them. The problem is then relatively simple, since the organism is presumably normal when infected.

In chronic disease, the defensive powers are gradually overwhelmed, the vital forces exhausted in varying directions and degrees. No longer can they be relied on promptly and efficiently to meet and overcome morbific agencies. Not only so, but the causal factors become increasingly complex,—a blend of psychic confusion, loss of physiologic conservation, and structural disintegration. Be the factors few or multiple, the whole symptom-complex becomes one of impairment not only of the governing vital mechanisms, but of the entire organism. Therapeutic agencies must, then, include systematic encouragement of all functions, rehabilitation not only of disordered noble organs, but of systems deranged as a whole.

Hence, the best remedies consist in conserving the action of circulation, respiration, metabolism, etc., not forgetting the inevitably impaired consciousness. Mental deviations invariably occur in all protracted disorders and must not only be first considered, but in all stages reckoned with.

The circulation stands next in importance, and the fact that the skin area is the largest, most readily influenced factor in sensation and reflex irritation should never be lost sight of.

Respiration stands at the basis of oxygenation, but the muscular system is an efficient ally. Both require education and exercise. The digestive organs, elaborate as they are, cannot carry out their complicated program unless they are, and remain, in full accord with the entire group of hydrostatic mechanisms. They cannot act and react harmoniously unless they be, and remain, in normal, or nearly normal, mechanical interrelationships one with another, their centers, nerves, and connecting parts unimpaired by faulty position, torsion, compression, or by disarranged or inadequate support from relaxed or feeble external walls. The integrity of the skeletal structures here exercises a powerful con-

tributory influence. Not only must these gross structures be maintained at their best, but wherever they suffer impairment beyond a certain degree the integrity of the vital processes suffers to an extent too generally overlooked. Elasticity is an essential factor in all tissues, except a few, like the bones, ligaments, and tendons. Hence, loss of tissue-tone, rigidities, adhesions, excessive compressions, and relaxations are factors which demand full consideration in solving any problem of long-standing functional disrepair.

Chronic morbid processes, while of wide diversity and due often to special disease entities, nonetheless are at bottom mere outgrowths of vitiated physiologic processes. Physiologic processes are uniform in their manifestations not only when normal, but also when deranged. The human organism is disturbed by disease, of whatsoever nature, along strictly analogous lines. The special features may and do vary, but chiefly in accordance with the structures altered, rather than by reason of the nature or character of the disease itself. The essential machinery, the vital processes of life, growth, change, and repair, can, if rightly conserved, be made to do its work as well as the damagements present permit. Hence, the organism as a whole is usually capable of recovering a fair measure of efficiency. Thus, it is the duty of clinicians so to enhance the autoprotective and regulative mechanisms as to compensate for the specific damagements.

This truism may seem so obvious as to need no elaboration, yet clinicians too often overlook the fact that these deranged physiologic processes can frequently be so utilized and enhanced as to secure degrees and kinds of betterment not always otherwise obtained.

In brief, I maintain that there is urgent need of a well-rounded presentation of the clinical pathology of chronic processes. So far as I can learn, this does not exist. We want systematic generalizations on morbid physiology of protracted disorders. This will prove of practical aid for clinicians in determining the character, scope, and remediableness of widespread losses in organic integrity.

Often closely analogous phenomena arise in persons suffering from morbid states widely divergent in essential pathology. Our remedial resources in chronic disease depend for efficiency upon a correct appreciation of: 1, the particular disease process; 2, what remains of the reparative powers of the individual as a whole; and 3, the degree and quality of the integrity of the structures deranged, damaged, or destroyed.

Among our medicinal agents there are a few, very few, drugs which are called *specifics*. These fluctuate in our confidence, at times fail, and occasionally (as in the case of the loudly heralded Ehrlich remedy) open the door of hope. The utmost they can accomplish in chronic disease is to unlock the avenues of toxic wastes, to overcome the specific agency so far as it continues to be forceful, and to free the organism of the immediate disabilities thereby caused. At best their limitations are most narrow.

Always behind the toxic entity there is a damaged human organism, a suffering animal, whose recovery depends in the final issue upon how far it is

possible to reawaken and redirect the inherent forces which sustain and maintain life.

Here is a field of opportunity, of scientific research, which, in my judgment, is not adequately explored; certainly not presented to the student as hopefully and systematically as the facts warrant.

Empiricism in these days of scientific advance is decried, yet the best results are often obtained by those who are equipped rather with good common sense, fortified by a practical knowledge of the physiologic resources of the organism. Too often the ultrascientific physician belittles this phase of clinicism and his unrelieved patients wander to strange apostles of health and get well.

Every one of us has experienced this chagrin. Now how do these extramural healers, these loud-boasting pretenders, manage to make good.

Plainly, they appreciate, apply skillfully and confidently, well-attested empirical remedies directly along the line of obvious needs for the individual. It has been my custom, whenever an unrelieved patient has left me and obtained satisfactory results at the hands of some irregular healer, to do my best to find out what was done and how. My experiences would form material for an interesting paper. In every instance I learned something worth knowing. Sometimes it was a new idea, a useful generalization, or a novel phase of well-known principles.[1]

From a wide reading on those subjects which constitute non-pharmaceutic therapeutics, it seems to me of use to present personal convictions deduced from experience to illustrate my contentions.

Clinicians do not seem fully to appreciate one fundamental principle in all therapeutics, viz.: the scope and efficiency of scientific personal hygiene and its special applicability in the treatment of chronic disease states. In my lectures I group the subject under three heads:—

1. *Conservative Personal Hygiene.*—Including those well-recognized and commonly observed rules of conduct which are supposed to be known and accepted of all physicians.

2. *Constructive Personal Hygiene.*—The selection and application of the best determinable means of so regulating human conduct as to raise the kinetic index to the highest dynamic possibilities, so that a practical equilibrium shall be attained. A large subject this, the basis of which lies in taking a broad view of physiologic laws, the utilization and enforcement of which will go far toward raising any individual (of average vital integrity) to a higher plane of efficiency. Every individual possesses vast unelaborated or unappreciated potentialities never hitherto utilized, and which it is the duty of the physician to estimate, and to teach how they shall be made available.

3. *Reconstructive Personal Hygiene.*—The subject of the present communication, "reconstructive personal hygiene," may include all those agencies

[1] Having for thirty years had a keen desire to improve my therapeutic resources, I have preserved clippings from medical and other literature containing hints which appeared useful. On reviewing these it is remarkable how many invaluable suggestions are to be found, insufficiently emphasized or made clear, yet, taken together, capable of adding much to our all too meager means of restoring lost vigor.

and procedures whereby an organism below the norm of efficiency, deranged or chronically diseased, can be raised to a higher plane, of original efficiency, or restored from damagement or long-standing disease. The dynamic index resides in the regulation of conduct. The coefficient of efficiency in each one is seldom known.

Personal hygiene may be defined as the scientific conservation and amplification of the body forces to secure potential equilibrium. The current conception is rather the practice of well-known rational measures for maintaining health. There is ample evidence to warrant the assumption that constructive personal hygiene is itself a science, and fully deserves to be developed as the most promising agency in both prevention and cure of disease. Adequately elaborated, it is capable of rendering increasing and almost limitless service to scientific medicine. Alone it can never suffice. Its powers can readily be overestimated—they often are.[2]

Two thoughts at once obtrude: 1. Our conception of the physiologic action of drugs demands critical and thorough rebuilding. This Sajous has done. 2. The whole subject of scientific hygiene demands equal attention with pharmacotherapy.

It is a significant fact which the medical mind is inclined to ignore that many valuable systems of healing originate among, or are brought to fruition by, overenthusiastic irregulars, whence they are forced on our attention. It is wise to accept the hints furnished, make researches into the essential principles involved, and to acquire skill with those remedial measures demonstrated to be sound. Some are invaluable, as I shall show. By means of them results can be obtained in certain disorders greater than by others now in use. At the worst, they afford convenient, efficient accessory and reinforcing curative agencies. We should realize the value of extramural healing methods, pick the meat out, and give our patients the benefit of whatever in them is worth while. There can be no doubt of brilliant cures effected by enthusiastic ignoramuses, or earnest men of one idea.

No alert business man or manufacturer would lose a chance to better his methods. Yet, medical men exhibit a stolidity, an indifference to flagrant inroads upon their domain, with a fatalistic philosophy or peevish denial of plain facts. Some of the cures wrought by irregular empirics are only partial, relief being obtained for the more obvious distresses; the ultimate lesions persist. It is our business as apostles of science to afford equal or better relief. The day of specific medication is past, despite occasional bursts of brilliant meteors like salvarsan or vaccine therapy. Recovery from chronic ailments will be achieved most largely by conservation of natural powers.

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[2] For example, there has been within a decade a notable evolution in the treatment of tuberculosis. I have heard a professor of clinical medicine assert, in a popular address, that the whole treatment of this infection now consists in fresh air and plenty of food, drugs being useless. Similar statements are constantly appearing. If they were true, then would the labor and self-sacrifice of the ages be rejected not only by the votaries of science, but by the laity, who are all too ready to belittle our careful observations and exact findings. Therapeutic nihilism is both false and hurtful to the best interests of the race. Nonetheless, the revolution thus indicated is significant.

Here, again, we find the burden of evidence in favor of the efficiency of rational agencies, included under the term *reconstructive personal hygiene*.

In almost every individual afflicted with protracted disease the latter is complicated by disorderliness in the mental and emotional spheres. Unless these aberrancies are reckoned with, the springs of thought and action, and especially feeling, set in order, balanced, rendered more normal and systematic, a large part of the symptom-complex persists. The feelings, disordered as they are, need full consideration, skilled interpretation, and sympathetic direction. The mind may be clear and efficient in some respects, but in others is not, and should be put into splints, rested, soothed, and restrained.

Especially are responses to physical stimuli from within liable to be misinterpreted, the more important ones subordinated, and the lesser ones exaggerated. Some lesions of gravity are wholly non-sensory; at least, awareness has not yet arisen to the threshold of consciousness (*e.g.*, abscessed teeth, impactions, splanchnoptoses, and other latent lesions capable of exciting complex distresses). Disturbances thus established between receptivity and determination have, then, become more or less automatic. They exert a persistent effect on physiologic integration, aggravating any existing minor departures from the norm. It may well be, as Charles L. Dana asserts, that there are no functional neuroses or psychoses. Disorders so initiated vary in proportion to the progressiveness of the functional eccentricities and the susceptibility of the consciousness, its propensity to go astray, or aptness to dominate the physiologic processes; in short, complex diseased states depend for solution upon the subserviency of the body to the directing agencies, conscious or intuitive.

A reasonable familiarity with neurology and psychiatry would, then, seem to be a prerequisite in rightly handling chronic disorders.

Even as drugs in small or large doses exert different effects, both in kind and degree, so are physical or hygienic measures followed by good or ill in proportion to judicious, systematic, or to indifferent direction and employment. Moreover, any remedy may at times act in a manner, or on a function, not expected or foreseen, for good or for harm, and this is often realized only by close observation (*e.g.*, thyroid extract in insomnia due to vague gouty symptoms—saline enemata in rheumatoid arthritis—removal of abscessed teeth in serious psychoses, etc.).

The whole problem of nutrition is shown by Horace Fletcher and others to rest largely on how food is prepared, selected, and, above all, masticated. High and low proteid dietaries, intestinal putrefaction, and the like questions settle themselves often by self-regulation of tastes or growing awareness of instinctive needs, learned through revised habits of eating.

So skin hygiene, consistently utilized, is capable of more than conservation, even of radical reconstruction. Facts brought accidentally to my attention have led me to secure unexpected and gratifying results by this means in manifold incurable states, as in chronic nephritis, gout, myositis, so-called chronic or muscular rheumatism, disintegration of circulatory structures and

of the central nervous system. A diseased kidney is often normal in parts, and to its ability to regenerate there is no known limit.

The principle of action, briefly, is to insist upon skin friction, prolonged and thorough, daily or oftener, by the patient or another, with or without heat and cold, salt, or oily inunctions, or other adjuvants.[3]

In this connection it may be remarked that habits of home bathing, even among the most intelligent, will often be found on scrutiny absurd or worse. Judicious regulation of home hydrotherapy can, and often does, secure gratifying and permanent effects on circulatory balance, notably the neutral immersion bath in arteriosclerosis, cerebral excitement, insomnia, and a wide group of hitherto-unrelieved disorganizations.[4]

Water externally is only second in importance to water internally. The history of spa treatment furnishes massive evidence worth studying. Colonic irrigation not only cleans out the lower bowel (made classic as a danger center by Metchnikoff), but also furnishes the best and simplest relief from toxic effects in many forms of genitourinary disorder. This diuretic action of colon-flushings—really invaluable—is alluded to in literature only incidentally, though it furnishes an excellent remedy in many chronic disorders where the heart and kidneys are competent and renal inadequacy is a feature. Of course, one should be careful to avoid overmuch of fluids in chronic nephritis and high blood-pressure with a weak heart.[5] Salt should not be used.

Respiration, commonly regarded merely as an automatic function, is capable of education and development into a potent agency for conservation and reconstruction, as the Yogis of India, and endemic enthusiasts elsewhere, have abundantly demonstrated—even after their claims are heavily discounted. My own experience with systematic respiratory education has been gratifying, especially in strengthening bed-ridden, lame, or otherwise handicapped folk. The use of this measure in chronic cardiac disease is plainly desirable.

This brings us anatomically to another auxiliary agency, which has apparently been left for me to emphasize, viz., increased elasticity of the skeletal, ligamentous, and other mobile structures as a factor in sustaining vigor.[6] To

[3] The treatment in one "fake cure" consisted of persistent skin friction applied over the entire body with a piece of haircloth moistened in a solution which I had analyzed and found to contain ammonium chloride. Ferrier (British Medical Journal, April 16, 1906) calls attention to the tabetic ataxy being due to impoverishment or loss of centripetal impressions of all kinds, conscious as well as unconscious; a default of the centripetal and subconscious impressions. Hence, this skin stimulation doubtless produces good effects in some cases, as I have found by experience. The one measure most emphasized by the proprietors of a certain kidney belt is skin friction to a degree of thoroughness most interesting. I have the privilege of knowing the principal, a man of wisdom and charm. He secures remarkable results by himself training the patient in reconstructive hygiene, insisting on daily skin friction of from one to two hours.

[4] To relieve high vascular tension and the varied group of discomforts and dangers which follow, nothing is more efficacious than a neutral immersion bath, of 95° to 98° F., for from half an hour to two hours.

[5] Colonic irrigations, employed in over a dozen bad cases, afforded a surgical friend of mine a curious and undesired reputation as a specialist in rheumatoid arthritis.

[6] The late Sir Herman Weber, of London, in a personal letter asserted as his opinion that I had pointed out in a paper (Popular Science Monthly, March, April, and May, 1904) the most potent factor in the aging of tissues—loss of elasticity—and in its conservation, the best means of securing longevity.

secure results from respiration obviously the thoracic structures must be normally elastic (they seldom are in middle-aged persons), and also the abdominal muscles must preserve normal tone—they very rarely do. Here educational exercises are required and accomplish much.

Note one practical need for mobility which at first presentation may cause demur, though experience emphasizes its truth: In the spinal column originate and are contained thirty-one pairs of spinal nerves. Between each two vertebræ lie cell-bodies closely concerned, among other duties, with vasomotor innervation. I have elsewhere elaborated this subject (as well as many other of the foregoing hints) and here can only offer conclusions. It is of deep significance to the welfare of symmetrical vasomotor action that the erector spinæ muscles, innervated as they are by the posterior primary divisions of the cord, shall be, and remain, normal and elastic. Correct posture is a corollary of elasticity. This includes the whole subject of mutual interrelationships of the viscera.[7] Attitude bears a close clinical relationship to normal functionation: *e.g.,* defecation, parturition, etc.

Coincidently with this subject is to be mentioned the exceeding importance of scientific manipulations, nerve-pressures, which form the basis of the successful, but overstated claims of certain *extramural* cults designated by picturesque, pseudoscientific names. Accident drew my attention to this subject thirty years ago, and since then I have placed on record my experience and convictions. Time and fuller experience confirm me in my earlier views. I am now prepared to urge the use of dexterous hand treatment—light, skillful nerve-pressures, done by, or strictly supervised by, the physician—as one of the most potent agencies in both diagnosis and treatment. By it can be achieved the cure or relief of many morbid states possible in no other way known to me. Physicians in the near future will realize the truth of this assertion. Hitherto the methods advocated, while at times efficient, have been of the crudest: *e.g.,* unskilled massage, bonesetting, etc.

The effects produced by skillful finger-pressures on the erector spinæ muscles are very patent and prompt. Blood-pressure can be raised or lowered. The effects are most marked where tension is abnormally high, and the relaxation of the peripheral vessels is so pronounced as not seldom to induce free sweating. This does not go further—never below normal for the individual. The best results are seen in high tension due to disease of the heart muscle. A young friend of mine, Fred Erdman, has devoted much study to the effects of manipulation; his observations are exact and growing numerous. He tells me he has reduced pressures from an excessive tension as much as 50 mm. Hg.; more commonly, 30 or 20 mm. Hg. My own observations are analogous, though less numerous. Low tension below the norm can also be somewhat raised; the effects, however, are not so lasting. My own experience leads me to assume that here we have an agency for the regulation of vascular tension which will prove safe and efficient.

As a means of distributing blood, and hence restoring deranged function,

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[7] See paper in the Journal of Advanced Therapeutics, March, 1911.

these nerve-pressures afford a large field of usefulness. Thus, in long-standing derangements of the digestive tract I have often been able to get permanent betterments; not only where surgical measures had been decided upon, but after operation had furnished no relief, function was restored by their use.

Surface structures in chronic states frequently need support, mild compression, agencies which call and keep the blood to a locality. This relieves sensory disturbances, even when deep-seated, invites phagocytes, and in other well-known ways encourages dormant activities. Bier's methods are valuable, but at best they are rather emphatic and their effects more or less transient. Oftentimes it is desirable, indeed much better, to maintain this passive hyperemia gently, continuously, and uniformly. The application of thin rubber tissue, as employed by Morris Longstreth, here serves a most satisfactory purpose. A part can be steadily influenced by wrapping the surface in rubber tissue. For example, the whole abdomen can be influenced uniformly and continuously. Thus are obtained the better effects of the now "taboo" poultice, which is indeed always—in proper cases—an excellent, reliable agency. A whole limb can be wrapped in tissue, inducing various desirable results, sometimes demonstrative of marvelous efficacy.

By means of a simple, yet especially good belt (also the device of Morris Longstreth) similar lasting and compelling effects are produced.[8] It is the only means I have found to lift satisfactorily the soft structures of the abdominal area, to free the hydrostatic mechanisms from compression, and hence from passive conditions, and to aid in the ebb and flow of fluids in waterlogged structures.

Conclusions.

1. In chronic disease the organism as a whole becomes exhausted through protracted, complex derangement; hence, reparative agencies are at a disadvantage as compared with the normal poise and efficiency of the organism when acute disease or injury arises.

2. Therefore, the pathology of chronic disease is something much more than that of acute states, involving many problems of morbid physiology and psychic disorder yet unsolved.

3. Remedial measures must be directed to the restitution of functional poise and should include all those rational measures capable of conserving and enhancing the autoprotective and autoregulative forces.

4. The basis of relief and cure is to be found along the line of palingenesis (development according to the primitive or original method); also of the overcoming of agencies which retard physiologic processes,—rehabilitation of all functional derangements, regulation of all contributory factors in vital action, so that full compensation shall be achieved of existing damagements.

[8] This belt is the best device in my knowledge, and I have tried all the more promising ones. It is five inches wide, and is applied where alone it is safe, viz., about the massive structures of the hip bones,—never compressing the structures of the lumbar region, where compression would be distinctly hurtful. It is worn loose and low, seizing the relatively rigid and non-sensitive muscle-masses of the pelvic girdle. See article by author, "Rational Treatment of Splanchnoptosis," Medical Record, October 17, 1908.

5. The utmost drugs and medicines can do is to contribute to these desirable effects, however nearly they may approach to the rôle of "specifics," for overcoming disease entities, unlocking the doors for toxic wastes, and freeing the organism as a whole from disabilities present.

6. The measures on which, in the final count, we can chiefly depend are included under the term *personal hygiene:* (*a*) conservative personal hygiene; (*b*) constructive personal hygiene, and especially (*c*) reconstructive personal hygiene.

7. The possibilities of reconstructive personal hygiene lie in the direction of making available latent, undeveloped energies in any adult below the norm, from whatsoever cause; in systematically utilizing the inherent dynamics, and in raising the coefficient of efficiency.

8. The practical purpose of this paper is to call attention to the fact that much can be achieved by bringing into line the functional power of the organs and tissues so as to secure the completest transformation of kinetic into dynamic energy no matter what the morbid agency.

9. Special vigilance is urged upon clinicians in restoring tissue elasticity, mobility, normality in the hydrostatic mechanisms; in amplifying the functional powers of respiration, circulation, urination, the skin, etc., and in affording support for relaxed structures.

Author's Abstract

HYPODERMIC MEDICATION; ITS ADVANTAGES AND TECHNIQUE.*

By J. BLAKE WHITE, M.D.,
NEW YORK CITY, N. Y.

It was not the intention of this paper to add to our knowledge of this subject, but rather to emphasize the value of a more general use of the hypodermic method and promote a proper recognition of the various details essential to success in its practice. These, as all knew, were too frequently disregarded, a neglect which resulted in detriment to the patient, if not in effects that greatly detracted from the usefulness of this system of treatment. The paper no doubt would appear rather elementary to those who regularly practised subcutaneous injection, but there were others to whom these details might naturally seem not to be of sufficient importance to warrant the very careful attention which they really required. If one paused a moment for reflection one would see that all the most certain results obtained today with therapeutic agents were achieved through this method of applying them, and it were natural to suppose that this already wide field would in the future be still further developed

* Abstract of paper read at the Twelfth Annual Meeting of the American Therapeutic Society, held in Boston, Mass., May 11, 12, and 13, 1911.

and enhanced in value. The paper included detailed directions in regard to the proper technique to be followed in making hypodermic injections.

DISCUSSION.

Dr. Dawes: Dr. White may practically be considered the father of this method in the present generation. Certainly, he has had more experience with it than others. Personally, I am a very strong advocate of the hypodermic method not only for sodium cacodylate, but for other drugs. In teaching our students we say that we get a better effect—a more exact effect—where we do away practically with what we call, for lack of a broader name, "idiosyncrasy," and instead of introducing into the individual stomach a drug without knowing how it is to be eliminated, or what its effect, we get a definite and dependable effect by using the hypodermic syringe. We say all this and then proceed to go out and give our drugs in pills or capsules; so that our position is certainly anomalous. Wherever I can, I use the hypodermic method, and it is not really so difficult to get your patients to let you administer drugs in that way. You only have to use one or two injections a day, where by the mouth you might have to give five or six doses, and at least twice the amount of drug. My method is to introduce the remedy intramuscularly, instead of subcutaneously. Meltzer and Auer have shown that the drug is absorbed more rapidly if given intramuscularly than if given subcutaneously, and my own clinical experience is in line with this. Another point is to have the temperature of the injection as near to the body temperature as possible (and Dr. White spoke of that) not only because it is absorbed more rapidly, but because there is less discomfort to the patient. In regard to large doses of sodium cacodylate, if you want to administer 600 mg. you should give two injections, as the result will be that the patient will refuse to take the treatment if you give such large single doses, on account of the pains produced. I think that we, as a society, ought to encourage the use of the hypodermic syringe as much as possible.

Dr. Robert T. Morris, New York: There is one side of this subject that surgeons would like to hear about. Not long ago I read about a doctor who injected in cases of chronic syphilis a certain solution which was painful and caused abscesses; but the patients were cured. He said he knew they were cured because none of them came back again for treatment. Two weeks ago I was cabled to go abroad to operate for a stomach ulcer, which it was impossible for me to do, and yesterday I got a letter describing the case. A lad had been given a tonic by hypodermic injection, and the injections had been followed by two abscesses, after which the stomach ulcer appeared. Toxins had probably been absorbed from the hypodermic needle abscesses, and had caused the gastric ulcer while being eliminated.

Dr. Stewart: Some years ago, when I was physician for a New York charitable institution and engaged in calling on patients in the tenement house district, I found it impossible to obtain sterile water for hypodermic medication without carrying a supply with me. I, therefore, conceived the plan of sterilizing the tap water extemporaneously by boiling it in a teaspoon wth the aid of a match. Some years ago, at Dr. John V. Shoemaker's hospital for skin diseases, we tried mercuric chloride hypodermically in treating syphiloderma, but the patients would not come back for a second injection on account of the pain resulting from the injections. We soon found out, however, that the pain was produced by the dull needles used, rather than by the drug employed. So we took care thereafter to use sharp needles; also to sharpen our needles after using this drug, as it corroded the needles. Then our patients came back for further treatment.

Dr. White: In my practice I have substituted the chloride of gold and sodium for mercury salts for hypodermic use, since it is not so apt to cause after-effects, and have found it very satisfactory when thus employed.

Cyclopedia of Current Literature

ACNE, VACCINES IN.

As the result of an extensive use of vaccines in acne the authors state that they have been compelled to form a very qualified estimate of their value. One cannot claim more for vaccine therapy in acne than that it is a useful adjuvant of the ordinary forms of treatment. Occasionally the condition will clear up remarkably under the vaccine, but there is a marked tendency to relapse, and it is usually necessary to continue the vaccine for long periods and to reinforce it with other measures.

The authors hold that vaccines should be reserved for selected cases, as follows: (1) Cases characterized by severe, deep-seated pustules, forming boil-like lesions, occupying a large area—the face and more or less of the chest and back; lesions in which micro-organisms are present in abundance, the staphylococcus greatly predominating, and the acne bacillus being difficult to find. (2) Cases in which the lesions are indolent and superficial, consisting chiefly of inflamed comedones which do not for the most part go beyond the papular stage, pustulation being slight and, so to speak, accidental. (3) Cases which combine the more severe and less severe lesions characteristic of the first and second groups.

For cases of the first group a staphylococcus vaccine may be used with advantage, but it must be administered over a period of some months. In cases of the second group the authors have found an acne bacillus vaccine to give good results in a reasonably large proportion of instances. In cases of the third group mixed vaccines of staphylococcus and acne bacillus are indicated.

In all instances attention must be paid to the other etiological factors, such as the rapid development of certain glands with the advent of puberty, and the plugging of the ducts, reflex circulatory disturbance due to nervous strain resulting from the changes of adolescence, digestive disorders, and the formation of intestinal toxins. Chronic constipation must be corrected, and the diet and mode of life regulated.

In regard to local measures, if suppuration has not occurred the comedones should be squeezed out and the part washed with soap and water frequently and energetically; if the suppurative stage has been reached, the pustules should be punctured or incised, bathed with hot water, and dressed antiseptically; the skin should be disinfected, and, in all cases of acne of the body, reinfection should be guarded against by frequent changes of the garment worn next the affected part. Other valuable measures are the X-rays and radium. To the former the severest cases will yield if the treatment is sufficiently prolonged; the latter is of value for indurated nodules.

The authors agree with those who hold that autogenous vaccines are more efficacious than stock vaccines, though in cases of the second group mentioned above they think it is better, perhaps, to use a stock vaccine from a trustworthy source, owing to the difficulty of cultivating the acne bacillus. They obtained best results in cases of this group with a stock vaccine [illegible] to millions, given every week or ten days. If the cultivation of the bacillus be attempted,

they find it advisable to inoculate not only the special media on which the bacillus will ordinarily grow, viz., acid agar, glucose agar (anaërobically), and oleic acid agar, but also human-blood agar and Löffler's blood-serum. Pus containing the bacillus should not be allowed to become dry, as this frequently kills the organism. The authors consider that control of the vaccine treatment by means of the opsonic index is of little importance and may be disregarded. Sir Malcolm Morris and Ernest Dore (British Journal of Dermatology, October, 1911).

ASTHMA, TREATMENT OF BRONCHIAL.

In treating 31 cases of bronchial asthma the author found the most effective drug next to morphine to be epinephrin chloride. Hardly have the 10 to 15 drops of the 1:1000 solution been given under or into the skin, he states, when the patient will declare that he is already better. Upon investigating the question of the blood-pressure in these cases and the effect of the epinephrin upon it, the author concludes that: (1) blood-pressure is not usually high in paroxysms of asthma; (2) it is not increased by epinephrin administered hypodermically in such paroxysms, but tends rather to be lowered. In most instances the pressure was lowered about 5 mm. and returned within a few minutes to its original level.

In many cases the relief from epinephrin, in addition to being prompt, was lasting, the patients having a rest for longer periods than after being relieved by other means. Other patients found it necessary to demand several hypodermics in twenty-four hours. One man learned to inject the drug himself and used as many as 4 or 5 hypodermics a day, usually at night. If he took the drug in the beginning of the attack he was promptly relieved and expectorated large quantities of thick mucus. In a few cases the drug failed to relieve. The author noticed that the sibilant and sonorous râles were not banished coincidently with relief of the asthmatic paroxysm by epinephrin. If we assume that the drug removes the spasmodic contracture of the bronchi, we cannot attribute, he says, the production of the râles to this bronchial spasm.

Some patients obtained comfort from smoking cigarettes of stramonium leaves or inhaling fumes. In a relatively few cases the author finds hypodermics of nitroglycerin useful. Morphine should be a last resort. Atropine, though much safer, is also much less sure.

Regarding the treatment in the intervals between paroxysms, the author calls attention to the necessity of detecting and overcoming etiological factors acting reflexly—deflected nasal septa, sensitive points near the inferior turbinates, disordered stomachs, and constipation—and of instituting a reduction cure where obesity is present. The sheet-anchor in the drug treatment of asthma is iodine. A prolonged course of 10 to 15 grains (0.65 to 1.0 Gm.) of potassium iodide, three times daily, should first be given, and thereafter ten-day periods of the use of the drug alternated with ten-day periods of intermission. I. I. Lemann (American Journal of the Medical Sciences, December, 1911).

CAFFEINE, EFFECTS OF, ON THE CIRCULATORY AND MUSCULAR SYSTEMS.

Blood-pressure experiments performed on human beings and dogs have enabled the author to sum up the effects of small doses of caffeine on the circulation as follows: In therapeutic doses caffeine has comparatively little influence on the

circulation. It slightly increases the force of the cardiac contractions, thereby causing some elevation in the general pressure. The pulse rate is usually not markedly affected, but such change as is produced is rather a retardation than an acceleration.

There is a widespread popular belief that caffeinic beverages increase the capability for muscular exertion, a belief which has been confirmed by ergographic experiments on men. In order to elucidate the question whether this result is due, with such doses as are ordinarily employed, to a central or to a peripheral muscular effect, the author investigated experimentally the effect of the drug on the knee-jerk in man and on the irritability and functional endurance of the gastrocnemius muscle in frogs. In the former series of tests, there appeared in every instance a marked increase in the vigor of the knee-jerk, beginning usually about twenty minutes after the ingestion of the drug, reaching its maximum in from forty to sixty minutes, and remaining above normal throughout the experiment. In the frog experiments the average of the whole amount of work done by normal muscles proved to be 127 milligrammeters, as compared with 132.8 milligrammeters in the case of caffeinized muscles. The author concludes, therefore, that caffeine acts as a stimulant to the reflex centers in the spinal cord; it enables the muscle to contract more vigorously without producing a secondary depression, so that the sum total of muscular work which can be done by a man under caffeine is greater than in one without it. This is confirmatory of the conclusion universally reached in the experience of mankind with caffeine beverages. H. C. Wood, Jr. (Therapeutic Gazette, January, 1912).

CHADDOCK'S SIGN.

The author records observations on 20 cases of miscellaneous nervous diseases with involvement of the pyramidal tracts in which a study of Chaddock's sign—the external malleolar reflex—and of several other tests was made. The new sign consists in irritating the outer side of the foot below the external malleolar process, when, if the reaction be positive, there occurs dorsal extension of the toes. Chaddock uses a moderately pointed nail file for eliciting the reflex. The degree of irritation should be varied. In some cases the merest touch is sufficient to excite the sign; in others rather severe scratching may be required. Usually the most sensitive point is a slight depression just in front of the lower point of the external malleolus and behind the tuberosity of the cuboid, but sometimes the movement occurs more readily when the posterior groove is scratched.

In all of the author's cases the Chaddock sign was elicited, and the contentions of its discoverer—that the malleolar sign is equal in value to the extensor plantar reflex (Babinski), that it is a more delicate test, appearing earlier and frequently lasting longer than the Babinski, and that it appears without the Babinski, whereas the Babinski does not occur without the Chaddock—were fully substantiated. Robert Ingram (Lancet-Clinic, October 14, 1911).

CHRONIC ARTHRITIS AND GOUT, TREATMENT OF.

The author reports his experiences with the use of radium emanations in 400 cases. The patient was in most instances subjected to the emanations in a closed room for two hours at a time, and the total number of sittings for each case was 24 to 36. Injections of soluble

radium salts in the neighborhood of the involved joints were also given to these patients. Superheated air, electric light and brine baths were also administered. Absolute rest in bed was found to be a good adjuvant to the treatment. In describing, in general, the results obtained, the author states that joint inflammations in children are particularly benefited by radium, but that arthritis in the senile, as well as tuberculous or syphilitic arthritis, is but little influenced. Cases of very long standing with marked joint alterations are not suited for the treatment, as a severe local reaction may occur. The blood of 50 cases of gout was examined before and after the treatment; whereas before treatment the blood had contained considerable amounts of sodium monourate, after treatment the uric acid had disappeared in 37 instances. An increase of the symptoms is generally caused by the treatment at first, but in three or four weeks, synchronously with disappearance of uric acid from the blood, marked amelioration becomes evident.

While the radium emanations are of great service, dietetic measures should not be overlooked. A low purin diet should be tried, at least, for a few weeks or months. If it gives no appreciable results, however, it may then be discontinued and replaced by a simple mixed diet, including as much of green vegetables and fruit as the gastrointestinal tract will stand. Consumption of alcoholic beverages should be limited, though absolute interdiction is required only in a relatively small proportion of cases. The amount allowed should be gauged according to the condition of the patient's nervous system and the habits prevalent in his country. F. Gudzent (Berliner klinische Wochenschrift, November 20, 1911).

ECZEMA, ALCOHOL IN THE TREATMENT OF.

Alcohol is employed by the author in eczema as an antiparasitic agent and for the relief of itching. He applies 90 per cent. alcohol twice daily to the lesions and the surrounding skin before carrying out the other local measures, and claims excellent results even in rebellious cases and cases of eczema of the anal margin. The alcohol treatment is applicable in all varieties of eczema except those with abundant watery discharge, and should be continued for a long period after the affection has been overcome, in order to prevent recurrence. (Monatshefte für praktische Dermatologie; Revue de thérapeutique médicochirurgicale, January 15, 1912.)

ECZEMATOID RINGWORM OF THE EXTREMITIES AND GROIN.

The author believes this affection more common than is generally supposed, having seen 15 cases, which formed an absolute majority of eczematoid eruptions limited to the palms and soles he has witnessed during the last two years. He divides the disease into three main types, viz., the acute vesiculobullous, the chronic intertriginous of the toes, and the chronic hyperkeratotic of the palms and soles. The first bursts out suddenly in twenty-four to forty-eight hours, and presents all the features of acute vesicular eczema. Pus is generally absent, but the exudation into the vesicles and bullæ is so violent as to be commonly pinkish from the presence of little blood. It is not usual to find any suggestive grouping of the vesicles into disks or rings, nor to notice a well-defined spreading edge. The causative agent may be the *Epidermophyton inguinale,* an ectothrix, or an organism not a

ringworm at all; clinical diagnosis is almost impossible without the aid of the microscope. The intertriginous type seems always to be secondary to a more or less acute attack, and takes the form of a white, sodden mass of epithelium between the toes, with a more or less definite margin and slight vesiculation at the dorsal edge of the interphalangeal skin. The hands may be similarly affected. There is intense itching. In the third, or hyperkeratotic, type the disease attacks the whole of the soles and occasionally the palms. The salient feature is the enormous and irregular massing of the overgrown horny layer. There is no marginate configuration, but here and there are small indolent pustules. The duration of the disease is variable, a number of years in most cases the author has seen. The complications appear to be due to secondary pyogenic infection, with lymphangitis.

The diagnosis lies in demonstration of the fungus, either by examination in potash of a scale from the most suggestive part of the eruption, laid on the slide with its deep surface upward, or by staining with methylene blue.

The disease is unusually resistant for a surface tinea, according to the author's experience. He found the most effective measure to be an ointment of 5 per cent. benzoic and 3 per cent. salicylic acids in soft paraffin and cocoanut oil. This combination he recommends for all forms of superficial tinea. For eczematoid ringworm of the feet and hands he has increased its strength up to 1 dram of benzoic and ½ dram of salicylic acid to the ounce. Where it fails, a convenient preparation is 1 dram of chrysarobin dissolved in equal parts of chloroform, alcohol, and acetone to the ounce. This may be applied in the morning on rising, the socks being pulled over it as soon as it has dried, which it does in a very short time. At bedtime it is washed off with soap and water. Arthur Whitfield (Proceedings of the Royal Society of Medicine, December, 1911).

EDEMA OF THE EYELIDS IN CHILDREN.

In discussing various difficulties of diagnosis encountered in children, the author calls attention to the fact that there are four conditions in which this symptom may be met with. The first two are chronic nephritis and the rare cases of congenital edema of the lids. The condition is also an early symptom of rheumatic pericarditis. In fact, it often appears before any other sign, unless it be an increase in the rapidity of respiration. In the three conditions just mentioned the edema is more marked in the upper eyelids, but in a fourth condition, whooping-cough, it is more often in the lower lids. As it appears sometimes before the cough it may be of assistance in the diagnosis. The author tells of the case of a boy brought to him because of loss of appetite, and who had no cough, but exhibited the symptoms above mentioned; a week later he developed the characteristic whoop. Hugh Thursfield (Birmingham Medical Review, December, 1911).

ENDOCARDITIS, MYOCARDIAL CHANGES IN.

As the result of a study of 287 cases of endocarditis, both acute and chronic, which came to the autopsy table, the author states that myocardial disease is present in greater or less degree in practically all cases. In most instances the myocardial change is not determined by and is not the direct result of the endocarditis, but is caused independently by the same, affiliated, or entirely inde-

pendent conditions. The form most frequently seen in chronic or late acute cases is fatty degeneration, a lesion which differs in no material histochemical respect from that involving voluntary muscle. From analogy, it seems that this degeneration in most instances succeeds a primary parenchymatous alteration. As a sequence to fatty degeneration, fibrous replacement and probably brown atrophy frequently appear. Treatment in endocarditis is mostly based on recognition of the dominance of the muscle factor, and in nearly all, except possibly syphilitic, cases it is without effect on the valvular change. Harlow Brooks (American Journal of the Medical Sciences, December, 1911).

EPIDIDYMODEFERENTIAL ANASTOMOSIS.

The author reviews the work of Martin, Carnot, and other surgeons and experimenters in this connection, and reports a case in which this mode of intervention proved successful. The patient had had a bilateral epididymitis of gonococcal origin eleven years before and was sterile and azoöspermic. The epididymis on each side presented palpable nodosities. The testicles did not seem atrophied, though the patient asserted that they had grown smaller. Upon laying open the tunica vaginalis at operation, the head of the epididymis was found slightly distended with a yellowish fluid. The organ was cut across perpendicularly at the level of the retracted portion, and the body and tail of the epididymis, together with the lower portion of the vas deferens, removed. The vas was then implanted in the head of the epididymis. The same procedure was then repeated on the other side. When heard from again, over twenty-one months later, the patient stated that the testicles had first augmented in size and consistence, that spermatozoa had reappeared about a year after the operation, and that his wife was pregnant. The author cautions against accepting the findings yielded by exploratory puncture of the testicle for spermatozoa, if negative, as an indication against operation. In the present case no spermatozoa would have been found, since sections of the portion of the epididymis removed showed none; yet, the result of the intervention was eventually a successful one. Delbet (Revue de thérapeutique médico-chirurgicale, January 15, 1912).

ERYSIPELAS, LOCAL TREATMENT OF.

The author employs a solution of 20 drops of phenol in 25 Gm. of pure neutral glycerin. No danger attends absorption of the phenol, erysipelatous patients showing a high degree of tolerance to this substance. The involved area, together with a zone of skin surface surrounding it, is simply painted with the solution. The glycerin avoids excessive irritation of the skin, but the preparation should not be brought in contact with mucous membranes. Lodi (Gazzetta degli Ospedali, September 5, 1911).

ESOPHAGEAL CARCINOMA, HYDROGEN PEROXIDE IN.

When the descent of food is hindered in cancer of the esophagus, the author recommends that the patient sip small amounts of hydrogen peroxide solution of 1 to 2 per cent. strength. A cleansing of the cancerous surface occurs which is sufficient to allow of easy passage of the food. Even in cases where rectal feeding has been found necessary this plan will often succeed. The peroxide solution should be sipped at intervals of an hour. G. Liebermeister (Münchener

medizinische Wochenschrift, September 19, 1911).

FURUNCLES, TREATMENT OF.

The treatment is divided by the author into that of the furuncle itself and that of the low opsonic index of the blood. When seen early a superficial furuncle may often be aborted by dipping a pointed matchstick in phenol and inserting the point deeply into the vesicle in the center of the furuncle. If the latter is rather deep, several drops of liquefied phenol may be injected with a hypodermic syringe at the base of the lesion. Given a furuncle late in the first stage, the author advises against the common procedure of incision, on the ground that it is unnecessarily mutilating and does not shorten the local disease, which is always a self-limiting process, nor relieve pain and induration. He counsels rather that the little central vesicle be merely scratched off and a Bier cup applied to suck out the exhausted serum and blood present; in the wake of the latter come from nearby tissues fresh blood, with fresh serum and fresh, vigorous leucocytes to combat the infectious process. Often the vesicle does not even have to be scratched, the cuticle being thin enough to be readily ruptured by the cup alone. A dressing of sterile gauze wrung short of saturation from a solution of normal saline with 1 per cent. sodium citrate is then applied, after inserting a bit of rubber dam in the opening if there be much tension. The citrate is required only three days, and during its use the surrounding skin should be protected by an ointment. The patient may make up his own solution by adding a teaspoonful of sodium citrate and 2½ teaspoonfuls of table salt to a glass of hot boiled water. Over the citrate gauze is applied a piece of waxed paper or oiled silk, then a compress of non-absorbent cotton or wool, and a cotton bandage. Sodium citrate should also be given internally, 15 grains (1 Gm.) three times daily, after meals, both for its action on the blood and diuretic influence. The cupping and dressing may be repeated and renewed every four hours until the slough is loose, when this may readily be removed with small dressing forceps. In most cases no visible scar remains.

Flabby, bluish, and sluggish granulations, if present, may be overcome by strapping the edges of the wound with adhesive strips. Then the granulations are dried, mopped with iodine tincture, and dusted with Bier's powder silver nitrate. Exuberant granulations should be snipped off with scissors. To promote epithelial regeneration, 8 per cent. scarlet-red ointment or amidoazotoluol may be employed.

Autoinoculation of adjacent hair follicles should be prevented by shaving a wide area of skin around the furuncle and disinfecting it with 70 per cent. alcohol, tincture of iodine with benzine, diluted liquor formaldehydi, or a solution of aluminum acetate. Local disinfection with benzine should be repeated at each dressing.

In furuncles first seen in the stage of marked softening and fluctuation, the pus should be evacuated by incision. Squeezing the lesion is to be avoided. The drain, aided by the Bier cup, will remove the pus.

To hasten the subsidence of enlarged lymph-nodes and of acute hyperplasia about the furuncle, thiosinamine may be given by mouth in 1½-grain (0.1 Gm.) doses three times daily after meals.

Active immunization by subcutaneous injection of killed staphylococci (bacterin therapy) is useful both for prophylactic

purposes and in the presence of furuncles,—unless there be a bacteremia. The author gives an initial dose of 0.25 c.c. of a 400 million to 1 c.c. suspension of dead bacteria in saline solution. This is increased by weekly doses up to 2.5 c.c.

The next best treatment of recurring furunculosis is by yeast, which stimulates phagocytosis and liberates carbonic acid.

In exceptionally large and severe furuncles the author injects 3 per cent. novocaine under the base of the tumor, and, after waiting five minutes, removes the core from the center of the tumor with a small curette. This method is also applicable to furuncles on the face, from which there is danger of sinus thrombosis. In supposed furuncles which develop into a carbuncle the safest and surest treatment is excision of the entire carbuncular area, hemorrhage being controlled by the Paquelin cautery and firm compresses, and the application of pure liquefied phenol. P. G. Skillern (Journal of the American Medical Association, September 16, 1911).

GONORRHEAL CERVICITIS AND ENDOMETRITIS, RECOGNITION AND TREATMENT OF.

The most prominent sign in all cases is a gradual increase in vaginal moisture, amounting finally to a distinct mucous or purulent discharge. A persistent mucopurulent discharge may excoriate the vulva, causing irritation, itching, a mild dermatitis, and occasionally dyspareunia. Burning on urination is oftener due to dribbling of urine over the excoriated mucous membrane of the vulva than to urethral irritation. Reflex systemic disturbances are not uncommon in chronic endocervicitis.

The appearance of the cervix and external os may indicate an infection. In acute cases the cervix may resemble a cauliflower, covered with offensive pus. In those less acute the mucosa may be swollen, everted, and hypersecreting. In chronic cases erosions of the surface about the external os and distended Nabothian glands are usually found. Hemorrhagic oozing follows slight traumatism.

Irrespective of a suggestive history, the symptoms, and physical signs, the diagnosis can and must be made by microscopic examination of the mucus or discharge. A single examination should never be deemed sufficient evidence when negative. Occasionally the specimen taken from the vaginal orifice will show gonococci, when none can be detected in the cervical specimen. This is due to gonococcal invasion of Bartholin's glands without infection of the endometrium.

As to treatment, the author states that the acute cases must be confined to bed and treated like all other pyogenic infections. The emunctories should be kept active and the diet limited. The vagina should be frequently cleansed with large quantities of hot water. Saline solution, boric acid, and weak iodine solutions are suitable for this purpose. The nozzle of the irrigator or syringe should have a single aperture and project a straight, forcible stream. If the mucous membrane surrounding the introitus is gently pinched around the neck of the nozzle, the vagina will be completely distended and satisfactorily flushed. When fully ballooned the pressure may be relaxed and the fluid permitted to escape. These maneuvers should be repeated until 3 or 4 quarts have been used. Intrauterine measures and pelvic operative intervention are absolutely contraindicated.

Subacute cases, *i.e.*, those where the

acute process has subsided, are more conveniently treated in the physician's office. The cervix is softened and dilated by means of Goelet's uterine electrodes and the galvanic current. When sufficiently dilated the uterine cavity should be flushed through an intrauterine irrigator with a hot watery solution of iodine, 1 dram (4 c.c.) of the tincture to a quart of water, or silver nitrate, 1:5000. As the condition improves daily intrauterine injections of iodized phenol (equal parts of tincture of iodine and phenol) or silver nitrate, 1 per cent., are substituted. A syringe with a long pliable nozzle, with its tip wrapped with cotton, is used. The fluid is injected into the cotton and the syringe withdrawn, leaving the saturated cotton within the cavity and protruding from the internal os. An iodine-glycerin tampon (1 dram to 4 ounces) is inserted and the patient instructed to remove it the next morning. The cotton within the uterus is removed at the next office visit.

In chronic cases diseased Nabothian glands must be punctured, evacuated, and sterilized. The opened glands and erosions about the os are touched with pure tincture of iodine. The intrauterine irrigations and injections already described, given three times a week, may prove useful. Curettage of the uterus alone will seldom effect a cure. It should be followed by swabbing with tincture of iodine and followed by appropriate after-treatment. In curetting, a semisharp instrument should be used for the body of the uterus. The internal os and cervical canal, however, should be thoroughly scraped with a slender, sharp curette. The freshened surface is then flushed and generously painted with iodine. W. T. Dannreuther (Medical Record, November 4, 1911).

HEMOPTYSIS, DIAGNOSTIC IMPORTANCE OF.

From a careful study of the literature bearing statistically on this symptom and personal experience with the affections in which it most frequently occurs the author reaches the conclusion that 90 per cent. of all hemoptyses are due to pulmonary tuberculosis. As a rule, definite signs and symptoms are present. Not uncommonly, however, signs and symptoms do not develop for months or even years.

Hemoptysis may occur in certain constitutional or blood diseases as merely another manifestation of the general tendency to bleed. It frequently occurs in broken compensation in heart disease and may occur in mitral stenosis as the only symptom of failing compensation. In such cases tuberculosis is frequently suspected; it is, however, rarely found. Hemoptysis may occur in any ulcerating or eroding pulmonary disease. It should, therefore, be expected in abscess, gangrene, bronchiectasis, or pulmonary cirrhosis. In such cases careful study of the signs and symptoms and frequent examinations of the sputum will usually suffice to rule out tuberculosis. It is very doubtful if vicarious menstruation or hysteria can produce hemoptysis in normal lungs.

Hemoptysis occurring without warning in young and healthy adults and passing off without the development of further signs or symptoms of tuberculosis is probably of tuberculous origin and should be so treated; by so doing the development of serious disease may be averted. Hemoptysis in pneumonia, bronchitis, asthma, or following trauma should lead to the suspicion of an under-

lying tuberculous process. W. B. Bartlett (Boston Medical and Surgical Journal, December 21, 1911).

HYPOPHYSIS AND THE ADRENALS, THE.

A watery extract of the posterior lobe of the pituitary exerts an effect on the suprarenals, as the author found that after intravenous injection of such an extract the amount of epinephrin in the suprarenals diminishes. *In vitro,* this extract also exerts an action on epinephrin, as it delays the appearance of the red color in Comessati's reaction for the presence of epinephrin. An extract of the posterior lobe does not cause this retardation. An extract of the posterior portion of the anterior lobe exerts an action analogous to that of the posterior lobe, but it is less intense. Trerotoli (Rivista critica di clinica medica, October 14, 1911).

INDENTATIONS OF SKULL AT BIRTH, TREATMENT OF.

In a case of depression of the frontal bone due to the use of forceps, the author was able to bring the bone to its normal position by exerting firm pressure with the fingers of both hands upon the bone surrounding the depressed area. No local swelling occurred, and the child subsequently underwent normal development. After further experience with this plan the author advises that the pressure be exerted concentrically, *i.e.,* as though it were being attempted with both thumbs on one side of the depression and the fingers on the other, to draw the margins of the depression together. The bone then suddenly snaps back, resuming wholly or partially its normal position. If only a part of the depression has been raised by the manipulation, further pressure is made at the margins of the areas still depressed until these, too, spring up into place. The procedure has proven uniformly successful in the author's hands, though in a few instances several hours' work was required to attain a complete restoration of the bony surface. A. Hoffmann (Medizinische Klinik, November 12, 1911).

INTRANASAL LUPUS, TREATMENT OF, BY SODIUM IODIDE AND HYDROGEN PEROXIDE.

The local application of iodine to lupus of the mucous membranes is known to give excellent results in some cases. The difficulty is that the applications can only be made by the physician or nurse from time to time and the treatment is, therefore, intermittent. The author has made use of Pfannenstiel's new method of treatment, by which this difficulty is overcome, and believes that if the details of the method are carefully followed it is of great utility.

The treatment depends upon the fact that, in the presence of ozone, iodides are decomposed and free iodine is liberated. The patient is given 45 grains of sodium iodide *per diem,* divided into six doses given at regular intervals. Every morning the nasal cavity is thoroughly cleansed of crusts and scabs by the nasal douche containing some sodium chloride and a mild antiseptic, such as boric acid. After drying, a tampon of sterilized gauze is inserted, care being taken that it lies in contact with the affected parts. Fortunately, in most cases the ulceration is in the inferior meatus and well within reach, the commonest sites being the septum, where a perforation often exists, and the inner wall of the ala. The patient is provided with a small bottle of a 2 per cent. solution of hydrogen peroxide, with which he constantly keeps

the tampon moist. He is instructed that he will know when the tampon is saturated by the fact that the solution will trickle back into the pharynx. Free iodine is thus liberated in proximity to the lesions, through the action of the peroxide upon the iodide excreted by the nasal mucosa. In some early cases the ulceration heals in a weak or ten days; more usually a fortnight or three weeks' treatment is necessary. J. H. Sequeira (British Journal of Dermatology, October, 1911).

IPECAC IN TYPHOID FEVER.

The author reports 6 cases of typhoid fever treated with ipecac, with good results. The course of the disease appeared to be shortened, fever disappearing on or before the tenth day after confinement to bed in every case. The ipecac was begun anywhere from the third to the seventh day after confinement to bed, and in every case but one the patient became afebrile within four days. In one case fever disappeared sixty hours after beginning the drug. Tincture of opium was usually given before the ipecac for the purpose of preventing vomiting, although in one case, in which the salol coating of an ipecac capsule became broken, vomiting occurred nevertheless. The dose of ipecac used in the earlier cases was 30 grains (2.0 Gm.) on the first evening, diminished daily by 5 grains down to 10 grains (0.65 Gm.); in other cases the dosage was 10 grains morning and evening, later decreased to 10 grains once daily. The author gives directions for coating the ipecac capsules. The salol is heated until nearly all melted, a long pin stuck in one end of the capsule, and the latter dipped into the salol; by removing and rotating the capsule the salol may coat it uniformly; this should be repeated until a coat about three times the thickness of the wall of an ordinary capsule is obtained; the capsule is then removed from the pin and dipped in order to coat the point where the pin was inserted. It is necessary that each fecal discharge of the patient be examined to find out whether any of the capsules pass without being dissolved. W. L. Frazier (Medical Record, November 4, 1911).

MALIGNANT GROWTHS, CURE OF, IN MICE.

Summarizing the results obtained in several years of experimental research on the treatment of cancer and sarcoma in mice, the authors state that they have found it possible by means of a preparation of eosin and selenium injected into the circulation of these animals to exert a pronounced influence on growing cancer-tissues. The neoplasmic cells are destroyed; the growths are softened, undergo absorption, and if not too large in proportion to the size of the animal (up to the size of a cherry) are entirely cured, without recurrence. In contradiction to existing opinion, it is thus shown to be possible to act on a tumor by way of the circulation and to destroy it selectively by means of chemical substances. The authors state, however, that they have at present no reason for believing that a similar beneficial effect will be produced in the human subject, though this is a question as yet uninvestigated. A. Wassermann, Keysser, and M. Wassermann (Deutsche medizinische Wochenschrift, December 21, 1911).

MARGINAL BLEPHARITIS, TREATMENT OF.

Children thus affected, the author notes, are frequently of the strumous

type, and this indicates general treatment which is of importance in preventing recurrences. Locally, the great point is cleanliness. The crusts should be removed carefully two or three times daily by means of a solution of sodium bicarbonate, 10 grains to the ounce. At first it may be necessary to soak off the crusts with a little warm olive oil. After careful washing a stimulating weak mercurial ointment (8 grains of ammoniated mercury or 4 grains of yellow oxide of mercury to the ounce of white petrolatum) should be gently rubbed into the roots of the lashes. It will be valueless, however, unless it is rubbed into places which are free from incrustations. If there is much discharge, especially purulent, the lashes may be cut short to facilitate cleansing of them. In the worst cases, in fact, it is sometimes best to epilate all lashes involved in pustules, since upon effective treatment to the latter depends the survival of the follicles and the restoration of a satisfactory line of lashes.

If the lid is much excoriated and pustular, 1 per cent. silver nitrate solution should be painted on the surface daily with a fine camel-hair pencil. It is well to keep the lids closed with a wet carbolic dressing (1 to 80) for a few days, removing it at least three times daily to cleanse the lids, either with the same solution or a soda lotion. Entrance of the carbolic solution between the lids is easily prevented by directing the child to keep the eyes gently closed while the lids are being cleaned and by wringing out the wet carbolic pad well before it is applied. Ointments are best avoided where there is much pus formation, but as soon as the lid margins are healing and the discharge has nearly stopped they can be employed with advantage.

It is very essential to keep the child from reinfecting the lids by dirty fingers. It is well to have the patient wear constantly lightly smoked, domed protecting spectacles. In the case of very young children it is often advisable to bandage light cardboard splints on the flexor surface of the elbows.

Errors of refractions are sometimes responsible for the onset of the disease, by inducing hyperemia, which spreads through the conjunctivæ to the lid margins. It is, therefore, important to prescribe any correcting glasses that may be required. Arnold Lawson (Practitioner, October, 1911).

MASTOIDITIS, A SYMPTOM OF.

The author calls attention to a symptom which is often present in early, doubtful cases of mastoiditis, and which he considers valuable as corroborative evidence. The symptom consists in a blurring of the outline of the mastoid tip as contrasted with that of the healthy side. It is quite distinct from any localized swelling, such as precedes a perforation of the mastoid cortex in the formation of a subperiosteal abscess, or a case of Bezold's mastoiditis, and is elicited by grasping the tip of the mastoid, anteriorly and posteriorly, between the fingers of one hand while exercising a control with the other hand on the healthy tip of the other side; the difference of definiteness of outline is then easily appreciable.

In a large number of cases of acute mastoiditis, the presence of this symptom in conjunction with an acute middle-ear suppuration led the author to operate, though the patient was apparently progressing as favorably as usual, and in every case the operative findings confirmed the value of the symptom as an indication for operation. Of course, a

negative finding has not the importance attached to the positive.

The swelling from otitis externa may sometimes lead to doubt, but this form of swelling is almost always reduced in a few days by local treatment and the use of the ice-bag, upon which event the above symptom becomes manifest if an acute mastoiditis exists.

The blurring of the outline of the mastoid is due to a mild inflammatory infiltration of the periosteum and adjacent soft structures, brought about by their juxtaposition to the underlying inflamed bone. H. A. Alderton (Medical Times, January, 1912).

MEASLES, EXPERIMENTAL.

The authors have succeeded in infecting a monkey of the species *Macacus sinicus* with measles by injecting intraperitoneally 6 c.c. of the blood of a child suffering from the preliminary symptoms of the disease. Their experiment confirms the similar results obtained by Anderson and Goldberger in *M. rhesus* and *M. cynomolgus,* and is of further interest in that it shows conclusively that measles is contagious before the eruptive stage. The child from whom the blood was obtained showed at the time merely prostration, conjunctival hyperemia, lachrymation, coryza, and a temperature of 39.2° C. (102.6° F.), the eruption appearing only twenty-four hours later. Another child in the same family was in a more advanced stage of typical measles. The monkey, after an incubation period of nine days, showed fever and slight prostration. The fever lasted six days only, the highest temperature attained being 40° C. (104° F.). C. Nicolle and E. Conseil (Académie de Médecine, Paris; Bulletin médical, January 3, 1912).

NUCLEIN IN SURGERY.

In view of the results obtained by von Mikulicz and Miyake from intraperitoneal injections of sodium nucleinate, the authors were led to try nuclein solution as a dressing for wounds which, though showing as yet no evidence of bacterial activity, were almost certainly infected. The nuclein solution was applied to cases of crushed and lacerated hands, burns, varicose ulcers, etc., as well as over numerous minor cuts. In no instance was there any subsequent infection, notwithstanding the fact that no attempt had been made to asepticize the wounds. Healing seemed to be accelerated, a result which the authors ascribe to leucocytosis induced by the drug. H. J. Achard and H. H. Redfield (New York Medical Journal, October 14, 1911).

OCCULT BLOOD, BENZIDINE TEST FOR.

The author reports a case in which, for the purpose of excluding gastric ulcer, a test-meal was given. The aspirated residue gave a positive reaction with the benzidine test and a negative one with the aloin and the guaiac tests. Second and third test-meals giving the same results, suspicion fell upon the method used. After many experiments in the laboratory it was found that prunes, which had been taken by the patient early in the morning on the days when the test-meals had been given, uniformly gave a distinct reaction in the benzidine solution. It is, therefore, necessary to add prunes to the list of foods that contain substances interfering with the benzidine test. Rice, milk, and potatoes also react to benzidine. S. Floersheim (American Journal of Gastro-Enterology, January, 1912).

OCCULT BLOOD, SOURCE OF ERROR IN TEST FOR.

The author reports a case in which the guaiac-turpentine test for occult blood in the feces gave the regulation deep-blue color, but a microscopic examination of the liquid feces failed to reveal any blood-cells, though the depth of the color reaction obtained in the test indicated a quantity of blood. Further examination disclosed the presence of minute portions of a material resembling blood, which proved to be watermelon pulp. It occurred to the author that the coloring matter of the melon pulp might give the characteristic chemical test for blood, and upon experimenting this was found to be true. It was also noticed that the expressed juice of the melon yielded a light-blue color in the test. An additional precaution to those already known to be necessary is thus required in employing the guaiac-turpentine test. W. A. Newbold (Journal of the American Medical Association, November 4, 1911).

PLEURITIS, X-RAY STUDIES OF SEROFIBRINOUS.

A combined clinical and skiagraphic investigation of 50 cases of simple serofibrinous pleurisy was made by the authors. In all but 8 cases, the findings were controlled by aspiration of the chest and cytodiagnosis. The studies led to many surprising developments. It was conclusively proved that these effusions are located, in the majority of cases, not in the lower portion of upright chest, as has hitherto been considered the rule, but in variable positions. This was found true of 75 per cent. of the cases. In almost 25 per cent. the fluid was in a vertical column in the lateral portion of the chest, compressing the whole lung toward the mediastinum; in 34 per cent. the fluid enveloped the lateral aspect of the lung and extended nearer the median line posteriorly than anteriorly. In about 16 per cent. the fluid occupied a more or less upright position, forming an oblique line across the chest, and extending from above downward and inward (6 per cent.) or in the posterior portion of the chest, depending upon the size of the effusion. These findings, the authors assert, support the theory that the location of the fluid depends upon the position assumed most constantly by the patient during the acute inflammatory stage of the disease.

The X-ray findings also clearly demonstrated the fact that these pleural exudates are slightly, if at all, mobile. Many of the exudates occupying the lower half of the upright chest remained in this position when the patient was turned in the lateral or dorsal position for X-ray examination. In all of the cases in which the fluid occupied a vertical or oblique position the shadow was quite unaltered upon change of posture. This fact is of diagnostic importance, as it helps in the differentiation of serofibrinous from other varieties of effusion.

Displacement of thoracic organs takes place in cases in which there is a large exudate in the lower half of the chest, but it is absent in the other cases. In large effusions filling one-half of the chest, there is more displacement of the mediastinum at the center than at its upper or lower portion. This fact, combined with the more or less vertical positions of the fluid, explains the absence of Grocco's sign in all those pleurisies but the ones occupying the lower portion of the upright chest.

The findings of the authors with respect to the position of serofibrinous ex-

udates furnish an explanation of certain other phenomena previously obscure, such as the presence of tympany over Traube's space with a left-sided pleurisy, the presence of physical findings of fluid posteriorly and not anteriorly or *vice versâ*, and Ellis's or Garland's S-shaped line.

The diagnosis of interlobular pleurisy and the differentiation between diaphragmatic and subdiaphragmatic collections of fluid are facilitated by X-ray examination. The presence on fluoroscopic examination of an immobile diaphragm of normal contour projected above its normal position in the thorax is pathognomonic of a subphrenic collection of fluid. Pleurisy between the lower pulmonary lobe and diaphragm should be suspected where there is a fluid shadow in the inferior portion of the chest, obliterating the normal curve and movements of the diaphragm, but not extending to the chest wall. W. Engelbach and R. D. Carman (American Journal of the Medical Sciences, December, 1911).

PNEUMONIA, ACUTE GASTRIC DILATATION IN.

The author reports and analyzes 11 cases in which this complication occurred. Five cases died and 6 recovered. The dilatation occurred before the crisis in 8 instances. The symptoms and physical signs were: Vomiting, abdominal pain, distention (due to enlarged stomach), constipation (diarrhea in a few cases), collapse, splashing sounds, peristaltic movement over the stomach. Early diagnosis being the first requisite in the treatment, the sudden appearance of these signs in the course of pneumonia should at once arouse the thought of acute gastric dilatation in the practitioner's mind. Before the patient is moribund, often before the diagnosis is definitely determined, and as a diagnostic step, a stomach-tube must be introduced and lavage practised. If the gastric contents are foul and copious, or if there is much flatus, relief will be almost instantaneous, and if the dilatation occurs after the crisis recovery may be confidently expected. The lavage must be practised as often as distention occurs. It is often feared that when a patient is collapsed, with running pulse, passage of the stomach-tube may be fatal. But this is a mistake; the tube is easily passed and relief is marked even in most desperate cases. The position of the patient is of some importance. The gastric distention causes constriction of the duodenum under the root of the mesentery, and the collapsed small intestines are far down in the pelvis, making the mechanical obstruction still more marked. By turning the patient on the right side or on the face, this element is probably largely removed. All food and drink by the mouth must be interdicted. Strychnine and eserine hypodermically seemed of value in 2 of the author's cases. M. H. Fussell (American Journal of the Medical Sciences, December, 1911).

PNEUMONIA, BACTERINS IN.

The authors report the results obtained in a series of 50 cases of pneumonia, 30 of which were put on the usual routine treatment and 20 were given bacterins in various doses. The cases of the latter group were not selected in any way, nor was the series continuous. Stock pneumobacterins representing many strains of pneumococci were employed. The doses used ranged from 25 to 600 millions, and the results seemed to be more definite with the larger amounts. The cases treated by bacterins seemed to

fall into three distinct groups: (1) those in which the injection was followed by a prompt fall of temperature to normal, there to remain, with a rapid amelioration of all the symptoms; (2) those in which, after a fall to or below normal, a subsequent rise occurred, not as high as that previously existing, this in turn followed by lysis to normal in twenty-four to forty-eight hours; (3) those in which there was no appreciable result. The earlier the bacterin was given, the more decided was the clinical reaction, and striking was the fact that in many instances the temperature reached normal on even days, often on the fourth or sixth.

The clinical phenomena are held by the authors to suffice for determination of the dose of bacterin to be used in any particular case. No definite rules as to dosage, however, can be stated. Whenever there occur malaise, lassitude, headache, chilliness or, more particularly, definite rigors, with or without a local reaction, accompanied by a rise of temperature with subsequent fall to below the previous level, it is unwise to increase the dose. A typhoid-fever patient had with each of the first two doses administered by one of the authors a distinct rigor and the other symptoms above mentioned, together with a most intense local reaction. This case illustrated the initial hypersusceptibility which is occasionally noted.

The mortality in the series was as follows: Of the 30 cases not given bacterins, 12 died, or 40 per cent.; of the 20 to whom bacterins were given, 3 died, or 15 per cent. In those cases in which a more or less well marked nephritis antedated the pneumonia, as judged by the urinary findings on admission, the attack of pneumonia was more severe and the prognosis more grave. Bacterins did not appear to exert any influence, pro or con, on the renal condition.

The final conclusion of the authors is that in some instances strikingly prompt and beneficent results follow the use of bacterins, but that, since these results are not uniform, something is lacking in the employment of dead cultures as at present practised. It is probable that their biological properties may be destroyed by the degree of heat used to kill the bacteria. A temperature not over 56° C. would be advisable, or 5 per cent. phenol in the proportion of ½ per cent. may be employed. W. E. Robertson and G. M. Illman (Pennsylvania Medical Journal, January, 1912).

PNEUMOPERITONEUM AND ABDOMINAL TYMPANITES, DIFFERENTIATION OF.

When excessive tympanitic distention of the bowel becomes so great as to diminish, or even occlude, the area of liver dullness, the progress of the disappearance of liver dullness is from below upward only. The upper border of liver dullness in cases of moderate distention never disappears, but is displaced farther upward at the expense of the pulmonary resonance. In cases with free gas in the peritoneal cavity, however, the author has found by a comparative study of the signs preceding perforation and the condition found on surgical intervention that, contrary to the prevailing conception, the disappearance of hepatic dullness progresses synchronously downward from the upper border of the liver dullness and upward from the lower, until the whole area of dullness has been obliterated. The explanation of this is to be found in the fact that when gas enters the peritoneal cavity it naturally rises to the highest level. The patient

lies with head and shoulders supported by pillows, and the air rises in the vault of the diaphragm, which is displaced upward. This results in compression of the lungs, especially the right lung, the base of which, in its circumference, is forced as far as possible into the angular space between the lower ribs and the costal attachment of the diaphragm. The respiration becoming very shallow, this portion of the right lung practically ceases to functionate, its air-cells remaining dilated and progressively concealing the upper area of liver dullness. Free gas in the peritoneum also intervenes between the diaphragm and liver, which is displaced downward and backward. There is, therefore, a progressive loss of liver dullness from above downward as well as from below upward.

While this concentric diminution of the area of hepatic dullness is most readily followed in hospital cases, even private cases of intestinal or other perforation of hollow abdominal viscera will early show total disappearance of the dullness, while cases in which diminished hepatic dullness is due to tympanites will show on careful percussion at least a narrow line of dullness encroaching upon the normal pulmonary resonance. The author finds this distinguishing feature of marked value in, *e.g.,* the diagnosis of perforation in typhoid fever, the presence of this complication being rendered certain at a much earlier stage than it is by the ordinary signs—increasing leucocytosis, accelerated pulse, symptoms of shock, etc.—taken alone. H. W. Berg (Medical Record, October 21, 1911).

POLIOMYELITIS, ACUTE.

The classic form of this disease is marked by an acute onset, flaccid leg paralysis, subsequent atrophy, and terminal contractures. Recently acquired facts show need, according to the author, of our knowing more of clinical poliomyelitis than that it is a disease limited to the anterior horns, affecting only young children and characterized in the main by fever and a painless kind of paralysis. Many more considerations worthy of note qualify the general picture. The paralysis singles out certain muscles or groups of muscles; it is a flaccid paralysis, frankly asymmetrical in its distribution. Only in the severest cases is the entire limb withered or destroyed. The affected muscles alone undergo atrophy; the corresponding tendon-reflexes are reduced or abolished, and in the affected muscle and nerve supply the response to a faradic current is reduced or altogether lost. Every case has not a stormy onset; the invasion may be so mild and afebrile that the subsequent weakness or paralysis may be the first clue to the disease. Finally, paralyses affecting, *e.g.,* the shoulder girdle are likely to occur in poliomyelitis, though less common than the leg and arm varieties.

The varieties based on predominant symptoms or such as stand in focal relation to anatomic levels in the brain and cord have been newly grouped by Wickman, Krause, and Mueller as follows: 1. The spinal poliomyelitic type. 2. The type of ascending or descending paralysis simulating Landry's paralysis. 3. The bulbar, or pontine, type. 4. The encephalitic type. 5. The ataxic type. 6. The polyneuritic type. 7. The meningeal type. 8. Abortive types.

Cranial nerve lesions, with or without spinal involvement, characterized many of the forms of poliomyelitis. In a case reported by the author he notes pontine symptoms, involvement of the sixth, seventh, and twelfth nerves,

paretic neck muscles, and ataxic gait with lost knee-jerks. The ataxia, which in his case bore the closest resemblance to a cerebellar ataxia, has already received mention by Wickman, Zapperb, and Spieler. Wickman cites an instance of oculoplegia, left facial and right hypoglossal paralysis, with ataxia of a cerebellar type. Mueller has reported a similar case presenting facial paralysis, notable hypotonia, and absence of the knee-jerk on one side. Of the cranial nerves, the seventh is most frequently affected, involving both its upper and lower branches. It is usually unilateral, and shows a tendency to improve; the resulting disability may be very slight. Wickman calls attention to the association of hypoglossal palsy in these bulbar and pontine types, where the facial is affected, and remarks also that on the part of the ocular nerves the third (oculomotor) and the sixth (abducens) are not infrequently involved. In some instances complete ophthalmoplegia has been observed; in others an isolated ptosis occurs. Optic atrophy was noted by Tedeschi in a case that had run its course. D'Orsay Hecht (Interstate Medical Journal, December, 1911).

PUERPERAL SEPSIS, TREATMENT OF.

In severe sepsis, where the infection is general, efforts have recently been made to attack the bacteremia by intravenous injections of various chemical substances. Formaldehyde, magnesium sulphate, and mercury bichloride have thus been used. The writer has treated a number of patients with the last-named agent. The technique is as follows: The basilic vein in the arm is generally chosen. A firm bandage or other constrictor is placed above the point of proposed injection in order to distend the vein thoroughly. A syringe is then filled with 20 drops of a 1 per cent. solution of mercury bichloride,—equal to ⅕ grain. A platinum needle is carefully inserted into the lumen of the vein, the constricting bandage removed, and the mercuric solution slowly injected into the circulating blood. The injections may be given once or twice daily and the treatment continued as long as deemed necessary. From 1 to 4 grains of the bichloride may be used during the treatment. Two precautions are to be noted: First, the teeth should be cleaned, if necessary by a dentist; this avoids salivation in many cases. Second, all salines should be omitted during the treatment, as their presence in the intestinal canal may precipitate a bloody diarrhea.

The author has given altogether intravenous mercurial injections. He has never seen any untoward results therefrom, and believes the reputed dangers of embolism in intravenous medication have been greatly overestimated. He reports 11 cases of undoubted septicemia treated by the injections, with 5 deaths and 6 recoveries. Mercury bichloride, he concludes, is not the ideal drug to combat septicemia, but it has the advantage of being easily associated with other forms of treatment, is harmless in action, and is worthy of trial in serious cases. H. M. Stowe (Chicago Medical Recorder, September, 1911).

RHEUMATISM, LIME-POOR DIET IN CHRONIC ARTICULAR.

Good results were obtained by the author in certain forms of subacute and chronic arthritis by limiting the calcium intake through dietary restrictions. Before prescribing this form of treatment one should first make sure by urinary analysis that there is a diminu-

tion of the amount of calcium excreted, —evidence that calcium is being retained in the organism,—as other cases do not respond to the treatment. It is the author's practice to have the patient stay in bed for three days on a test-diet of rice, chopped beef, bread and meat extract bouillon, milk, etc., representing about 200 Gm. of dry substances and containing about 1.86 Gm. of calcium oxide. If the amount of lime eliminated daily does not exceed one-tenth of this figure, the lime-poor diet is ordered for six or eight weeks. The articles of food allowed include white or aleuronat bread, rice, tapioca, wheat flakes, millet, sago, tomatoes, mushrooms, cream of rice, cream of wheat, white of egg, meat bouillon, meat extracts, beef, calves' liver, tongue, all sweetened articles, honey, marmalade, vegetable fats, light beer, carbonated waters, champagne, port. Distilled water is to be used exclusively in the preparation of food. After six or eight weeks the dietary restrictions may be somewhat relaxed, but milk, butter, yolk of egg, potatoes, and spinach are to be absolutely prohibited, and the other vegetables should only be taken in small amounts. Cases of deforming arthritis, cases where joint pains follow an acute polyarthritic attack, and cases of chronic spinal ankylosis were particularly benefited by the lime-poor diet. M. Hirschberg (Berliner klinische Wochenschrift, November 13, 1911).

RHEUMATOID ARTHRITIS, TREATMENT OF.

The not infrequent mistake of diagnosing rheumatoid arthritis as gout, and the consequent placing of the patient on a restricted and spare diet, has undoubtedly led, in the author's estimation, to the development of severe and incurable forms of the disease. It is essentially a disease that requires good and nutritious feeding. The diet should be as liberal as the patient can digest, and animal food partaken of freely, though not to the exclusion of vegetables.

The drugs which the author has found most useful in rheumatoid arthritis are guaiacol and potassium iodide. After employing the former drug in several thousand cases the author claims that if given in sufficient quantities and long enough it is capable in the great majority of cases of arresting the disease, diminishing the size of the joints, and permitting increased movements. It also relieves pain markedly. It is useful in both the subacute and chronic forms of rheumatoid arthritis, and probably acts by inhibiting the growth of the specific micro-organism in the intestinal tract, and after absorption by combining with the bacterial toxins and assisting in their elimination. The author gives the carbonate of guaiacol in cachets. At first from 5 to 10 grains of the drug should be given three times daily, and the dose then increased by 1 to 2 grains each week up to 15 or 20 grains. It is essential that this treatment be continued for at least twelve months. The beneficial effects are increased by combining with the guaiacol a mixture containing 10 grains of potassium iodide in each dose; the depressing effect of the iodide should be counteracted by means of tonics. This plan of treatment the author considers far superior to that with arsenic and iron. If it is commenced in the comparatively early stages of the disease, recovery with very little deformity may result; but even if after arrest of the disease there is much deformity, considerable joint mobility may be obtained with baths, superheated air, massage, and passive movements.

In the early stages of those forms of

rheumatoid arthritis which are associated with Reynond-like symptoms and cramps in the extremities, thyroid extract is of great value, but the author has not found it useful in the later stages.

The thermal treatment of the affected joints, either by means of baths, superheated air, or electric light baths, is most beneficial. Douche massage is the most effective form of treatment with hot water, and perhaps next to that rank peat baths and brine baths. Properly regulated movements and massage are helpful to overcome stiffening of joints and the muscular wasting.

The Bier method of hyperemia is often of great use when the joints affected are few in number. It can be employed even when the joints are acutely inflamed and often gives great relief from pain.

Where the joints have become more or less fixed owing to fibroid thickenings, fibrolysin is of value, and if this is followed by massage of the affected parts the thickened tissues stretch and undergo absorption.

In those cases of arthritis secondary to a chronic colitis, irrigation of the colon by the Plombières method will be found very effective. A. P. Luff (Practitioner, January, 1912).

SALVARSAN.

The fact is pointed out by the author that salvarsan, when made into a solution with sterile distilled water, is not isotonic with the blood, and produces a chill soon after the intravenous administration, because of hemolysis taking place. Hemolysis does not occur, in his experience, when saline solution is substituted for the distilled water; the patients do not have rigors and are not so sick. It is difficult to determine the exact rôle of the sodium hydrate in the solution as regards the effect on the blood. Whether the sodium chloride prevents the sodium hydrate from exerting any deleterious action on the blood-corpuscles has not yet been determined.

Concerning the use of salvarsan in ophthalmic conditions, the author states that he has given several cases of retinochoroiditis with sudden blindness salvarsan treatment, with rapid and marked benefit. When the optic nerves are diseased, even in an advanced stage, and in emergency conditions, the author does not fear to administer salvarsan; but he gives it only intravenously, as all the cases of involvement of the cranial nerves following the use of salvarsan have occurred where the drug had been used intramuscularly. It was formerly thought that involvement of the auditory and optic nerves following intramuscular injection of salvarsan might be due to an arsenical neuritis, the result, perhaps, of an idiosyncrasy on the part of the patient. This has been disproved. Neuritis of cranial nerves after salvarsan is merely coincidental and only a syphilitic inflammation of the nerve proper without connection with the arsenic. Yet it is a wise precautionary measure to have an ophthalmoscopic examination made preceding the intravenous use of salvarsan.

A single dose of salvarsan, as a rule, produces only a mild parasitotropic action; the good results following an initial dose may be due more to its organotropic effect, improving an existing anemia, and stimulating body metabolism. This should be explained to the patient, as most laymen are under the impression that a single dose is curative.

The author administers pilocarpine hydrochloride in doses of from $\frac{1}{32}$ to $\frac{1}{16}$

grain, well diluted, three times a day by mouth or hypodermically, for two days before giving salvarsan, with the idea that it will stimulate the glandular system and wake up latent spirochetæ into activity, so that they may be more readily reached by the salvarsan. J. L. Boehm (New York Medical Journal, December 2, 1911).

SALVARSAN. PRECAUTIONS TO BE TAKEN IN ADMINISTERING.

The author states his belief that all cases of coma appearing forty-eight or seventy-two hours after administration are due either to faulty technique or to exaggerated dosage. In his experience the use of impure saline solutions as a menstruum has also had much to do with the production of marked reactions associated with fever. That an anaphylactic condition is not responsible for the untoward effects witnessed is suggested by the following case: A man syphilitic since six months demanded insistently to be treated with salvarsan, although an injection of 0.6 Gm. previously administered elsewhere had induced after four days coma lasting forty-eight hours and loss of memory persisting a week. The author was able to give this patient successive doses of 0.2, 0.3, 0.4, and 0.3 Gm. without causing any untoward effect except slight jaundice after the last dose. An anaphylactic state could evidently not have been present in this case; otherwise, the same disturbances as appeared after the initial injection should have been present.

The precautions to be taken, according to the author, in administering salvarsan are as follows: 1. Precautions concerning the patient: (*a*) one should ascertain whether he has ever taken arsenic and if so whether it is well borne: if not, some arsenical preparation should be injected subcutaneously as a test, in order to exclude the presence of idiosyncrasy; (*b*) wait five days before injecting salvarsan, to permit of elimination of the arsenic already given; (*c*) special caution is necessary in giving injections to hemiplegics and paretics. 2. Precautions in the preparation of the solution: (*a*) use a 0.6 per cent. salt solution and not a 0.9 per cent. solution; (*b*) use water distilled the same day and sterilized at once after preparation of the solution; (*c*) add to the solution, after it is ready, 1 drop of sodium hydrate solution to insure hyperalkalinity; (*d*) dilute the solution so that 0.01 of salvarsan is contained in 4.5 c.c. of salt solution. 3. Precautions in the administration: (*a*) inject very slowly, especially at first; (*b*) begin with a dose of only 0.3 Gm. in subjects in whom no unfavorable conditions have been discovered, and with 0.1 in others; (*c*) increase the dose later only if the preceding injection has proven entirely innocuous; (*d*) use only 0.3 or 0.4 as the average dose; (*e*) allow sufficient intervals of time to elapse between injections,—one week between the first two injections; two weeks later.

If these precautions are observed all serious untoward effects will be avoided. The author has given about 6000 to 8000 injections in about 1500 subjects, many of them with serious conditions contraindicating salvarsan, such as paresis, tabes, hemiplegia, cardiac weakness, nephritis, and angina pectoris, with registering a single death. Among the most severe untoward phenomena seen were jaundice lasting three weeks in 3 cases and thrombosis of veins of lower extremity in 2 cases,—one an obese woman with varicose veins and the other an aged man. Milian (Société Médicale des Hôpitaux,

Paris; Bulletin médical, November 29, 1911).

SCIATICA, TREATMENT OF.

The treatment of the classic variety of sciatica (primary sciatica) is described by the author as follows: The patient should be placed at rest in bed, and hot cloths, counterirritants, or soothing remedies applied along the limb. Two or three doses of the ordinary analgesic remedies may be given internally in the twenty-four hours. In ten days to a fortnight the acute attack will frequently come to an end under the influence of these simple measures. Sulphur baths, gentle massage, hot-air baths may then be administered with benefit. At this time a more or less elastic supporting bandage, applied from below upward, should be worn around the limb.

If the acute attack is prolonged beyond the period mentioned, sulphur baths or hot carbon dioxide baths should be employed. The latter should be at a temperature of 39.3° to 40° C. (102.7° to 104° F.), and last twenty minutes. Heat may also be applied in various other ways. Massage and electricity should, however, be employed only with considerable circumspection in this stage.

If these measures fail, the author counsels treatment by injections of saline solution and of air, the aim of which is: (1) to liberate the nerve-root or the nerve-trunk and its branches from the pressure exerted by adjacent hyperemic tissues; (2) to create an osmotic disturbance by means of hypertonic saline solution and induce a profound reaction. The author warns against the employment in sciatica of the alcohol injection method, which, though rational and effective in the case of the sensory trigeminus nerve, may cause motor paralysis and return of pain in the former affection. He administers several forms of injection at once, as follows: (1) 800 to 1000 c.c. of air are injected under the skin on the outer aspect of the leg. The injection, if given slowly, is practically painless. The air should be filtered through cotton while being injected. (2) 60 to 80 c.c. of 0.8 per cent. salt solution, with 0.01 to 0.02 Gm. (⅙ to ⅓ grain) of novocaine added, are injected just below the sacrosciatic notch, at the upper part of the ischiotrochanteric groove. The injection should be made as close to the nerve as possible, but the nerve should be entered, to avoid excessive pain. (3) 10 to 20 c.c. of 0.8 per cent. salt solution, with 0.01 Gm. (⅙ grain) of novocaine, are injected into the epidural space of the inferior lumbar region, the needle being passed in under the coccyx through the coccygeal notch. The course of the injection is previously anesthetized with novocaine. Fibrillary contractions of the gluteal and preischial muscles, and a sensation on the part of the patient of fluid ascending in the spinal canal, indicate that the injection of saline solution is being made correctly. (4) In cases of sciatica with very severe pains and contractures of the lumbar muscles, a needle may either be passed through the ligamenta subflava between the third and fourth lumbar vertebræ or introduced as in the performance of lumbar puncture. When cerebrospinal fluid begins to flow, the needle is slowly drawn out until the fluid stops running out, and an injection of 10 to 15 c.c. of salt solution then made not into the cerebrospinal fluid, but in the epidural space. Long platinum needles are to be used in administering these injections. The site of injection is in each case first disinfected with tincture of iodine.

The injections should be repeated at intervals of three or four days, using, however, instead of 0.8 per cent. saline, a slightly hypertonic solution,—1 to 1.2 per cent. Two to five series of injections will cure cases of sciatica resistant to other measures. Sicard (Journal de médecine de Paris; Revue de thérapeutique médico-chirurgicale, January 15, 1912).

SMALL-POX, IODINE IN.

The author has treated 85 small-pox patients with a mixture of 10 per cent. iodine and 90 per cent. glycerin, for the purpose of shortening the period of the pustular stage. The preparation was painted over the pustules two or three times a day. The results were the drying of the lesions, absorption of the toxin, arrest of tissue destruction, and, hence, prevention of subsequent pock-marks. Pustules on the face may be opened up, the author states, with a sterile instrument and touched with tincture of iodine. Frequently desquamation is completed in from four to six days, except a few pustules on the palms and soles, which may be opened, touched with iodine tincture, and the patient then discharged. All the author's cases recovered. Their average stay in the hospital was only twelve days. C. S. Rockhill (Journal of the American Medical Association, January 27, 1912).

SUGARS IN INFANT FEEDING.

Fever can be produced in infants, according to Finkelstein, by sugars alone, without the action of bacteria or toxins. He showed that a very small amount of sugar can cause the severest grade of "alimentary intoxication" in susceptible infants. The author of the present paper tested experimentally the effect of the various sugars on a large number of infants, using chemically pure lactose, maltose, saccharose, glucose, and several mixtures. The infants were mostly under three months of age. The conclusion reached was that a combination of about equal parts of maltose and dextrin is best borne in the artificial feeding of infants. Dyspeptic stools and rise of temperature appeared much less frequently than with other sugars. J. S. Leopold (Archives of Pediatrics, October, 1911).

SUPRARENAL CAPSULES, HYDATID CYSTS OF.

Out of 10,000 cases of hydatid cyst that came under the author's notice in the course of researches on echinococcic involvement of the urinary organs, 6 cases of hydatid cyst of the adrenals were met with. Three were due to the Bavarian-Tyrolese form of echinococcosis and three to the ordinary form. Four times the involvement was on the right side of the body, twice on the left. In none of these cases had manifestations of adrenal insufficiency appeared during life, the lesions merely being found at autopsy. Nicaise (Association Française d'Urologie; Bulletin médical, November 15, 1911).

TETANUS, TREATMENT OF.

The author describes a plan of treatment with which he obtained five consecutive recoveries from tetanus. Two additional cases treated by others in the same way also recovered. A solution of pure phenol of 10 per cent. strength was made by dissolving the deliquesced crystals of this substance in sterile water, diluted to suit the case, generally to 30 or 40 minims, and administered by injection deep into the muscles. The dose was repeated at intervals of three hours at first, the intervals being then increased as improvement appeared.

The full adult dose employed was 10 drops of the 10 per cent. solution, equally practically 1 grain of pure phenol. As a precaution against soreness or suppuration, the author sometimes diluted with sterile water half the amount, 5 drops, to the capacity of 25- or 30- minim syringe, and injected this into one buttock, following at once with the remainder of the dose in the opposite buttock; the succeeding injections can also be made, the author suggests, into the deltoids or the pectoral muscles. No bad results followed, however, the injection of the entire dose, properly diluted (*i.e.*, to 40 minims), in the author's cases. In fully developed cases the second dose is to be given one hour after the first. The urine must be watched, and if the characteristic smoky color develops strongly the injections should be temporarily stopped. The author was never obliged, however, to withdraw the remedy in his cases. The original wound should be excised or cauterized as usual, preferably with strong solutions of phenol, silver nitrate, or nitric acid.

One of the author's cases was first treated with antitoxin without result; when, seemingly, he was in a fair way to succumb, the treatment was changed to phenol, whereupon improvement was very prompt. Two cases treated with antitoxin, but not with phenol, perished. In every patient subjected to phenol treatment, the severity of the tonic convulsions diminished markedly with the successive injections. Sometimes the number of attacks was lessened and their duration shortened after the third or fourth dose. In 3 cases a diffuse, punctate, scarlatinal rash appeared; whether it was due to the injections or not the author is not prepared to say. Pearce Kintzing (New York Medical Journal, December 23, 1911).

TYPHOID AND PARATYPHOID FEVERS, THE LEUCOCYTES IN THE EARLY DIAGNOSIS OF.

The importance of differential leucocyte counts in the early or "preagglutination" diagnosis of the typhoid groups of infections is emphasized by the author. The regularity of occurrence and the early appearance of the leucocytic changes in typhoid and paratyphoid fevers, he says, after a careful study of the blood in 18 cases of the former and 7 of the latter affection, are striking. In his opinion the most important facts in the diagnosis of these fevers, given in the order of their importance, are: (*a*) the clinical condition known as typhoid; (*b*) the characteristic leucocytic picture; (*c*) the bacillemia or blood-culture, and (*d*) the Widal reaction. Since the Widal reaction, roseola and splenomegaly appear only in the middle of the second week, it is evident that in most cases there are eight, nine, and ten days of expectancy for the family physician. Careful, repeated double leucocyte counts, according to the author, afford the earliest reliable means of typhoid diagnosis for the general practitioner.

The leucocytic picture of typhoid fever consists in the following: (*a*) Leucopenia, marked, early and progressive, very likely preceded for twelve to twenty-four hours by a slight leucocytosis. (*b*) Initial polynucleosis, lasting the first four to eight days, moderate in all uncomplicated cases. (*c*) A progressive and marked mononucleosis (lymphocytosis), displacing the polynucleosis, and lasting well into recovery. (*d*) A constantly present, well-marked increase in the large mononuclears, which begins with the onset of the disease

and disappears only after four to five weeks. (*e*) A sudden, early, and complete disappearance of eosinophiles, followed by a very slow and hesitating reappearance synchronous with the first inklings of recovery. The eosinophiles disappear in relapses, and are of great prognostic value, both as to the severity of the disease and its duration.

The leucocytic picture of paratyphoid fever is almost identical with that of the Eberthian infection, being lighter in all its phases, in correspondence with the moderate intensity of all clinical paratyphoid symptoms. J. F. Hultgen (American Journal of the Medical Sciences, August, 1911).

TYPHOID FEVER, ABSCESS OF THE LIVER IN.

Abscess of the liver occurring in association with or following typhoid fever may be either multiple or solitary. Romberg assigned to it the following causes: (1) typhoid ulceration of the gall-passages proceeding to suppuration; (2) suppurative pylephlebitis in association with typhoid fever; (3) pyemic infection from some other point in the body. This classification, though it is still generally adhered to, the author considers too restricted. Abscess formation may occur at the site of focal necrosis, infarction, or injury, or in association with pre-existing disease, or possibly from undetermined causes. The author discusses solely the solitary form of abscess, which, he says, has come to be considered an important clinical type, as in such cases only may surgical treatment be undertaken with prospects of success.

From a critical examination of the records of 30 cases,—29 reported in the literature with 1 personal case,—the conclusions reached were as follows: Age and sex have no bearing upon the incidence of liver abscess apart from their relation to typhoid fever generally. As predisposing factors, virulence of the primary infection, traumatism, and pre-existing disease would appear to have been established. The frequency of liver abscess in relation to typhoid fever reported from hot climates may be accounted for (*a*) by the high incidence of typhoid infection in European drafts, and (*b*) by the pre-existence or occurrence during convalescence of amebic infection. The onset of the symptoms of liver abscess may occur early in the course of the primary infection, after a fever-free interval of days or weeks, or as a remote sequel. Of the symptoms of onset, enlargement of the liver, fever, local pain, and tenderness are the most characteristic. Jaundice is present in about 15 per cent. of the cases only. In about 50 per cent. the focus of suppuration is in the right hepatic lobe. The occurrence of chills is apparently without relation to the organism or organisms found in the local lesion.

There appears to be ground for the assumption that foci of suppuration in the liver due to *Bacillus typhosus* may occasionally undergo spontaneous resolution.

Pleuritis, either serous or purulent, not infrequently occurs as an associated complication. The only safe method of treatment is by incision and drainage, the route selected—abdominal or transpleural—depending upon the location of the abscess. Preliminary transperitoneal puncture should not be practised owing to the danger of leakage and peritonitis. E. M. von Eberts (American Journal of the Medical Sciences, June, 1911).

URETHRITIS, DIFFERENTIATING ANTERIOR AND POSTERIOR.

In using the two-glass test when there is a posterior urethritis of sufficient severity to have caused a backward flow into the bladder, the second glass will be cloudy with pus and shreds, thus demonstrating the presence of an infection of the posterior urethra. But since the first glass contains the contents of entire urethra, a mild posterior urethritis cannot always be excluded when the second glass is clear. One method of overcoming this discrepancy in doubtful cases is that of irrigating the anterior urethra before the patient urinates; any pus or shreds contained in either glass are said to be from the posterior urethra.

A second method, which the author considers more reliable, is the staining of the shreds with a solution of basic fuchsin, 0.5 per cent. in distilled water. One c.c. is slowly injected into the anterior urethra and retained one-half to one minute, with slight massage. The fluid is allowed to escape on a piece of cotton, and the patient then urinates into two high glasses. All the shreds of the anterior urethra are stained deep red. If there are only white or unstained shreds present the infection may be said to be in the posterior urethra. When both stained and unstained shreds are present the localization is both anterior and posterior. When only stained shreds are present there is no posterior urethritis. Thus the fallibility of the two-glass test is overcome. M. Wolff (Quarterly Bulletin of Northwestern Univ. Med. School, Dec. 15, 1911).

VACCINATION SITE, TREATMENT OF, WITH PICRIC ACID SOLUTIONS.

The best possible protection to the vaccinal ulceration, according to the authors, is afforded by the formation of a hard, concrete crust due to desiccation of the contents of the vaccine vesicle and pustule. In view of the property of solutions of picric acid of entering into chemical union with the keratin of epithelial tissue and thereby hardening it, the application of this acid to the vaccinal lesion is recommended by the authors. They used this treatment in 22 children, with most satisfactory results. A 4 per cent. solution of the acid in 95 per cent. alcohol was painted over and around the vaccinal site forty-eight hours after the insertion of the lymph. The paintings were then given daily. The procedure was found not to interfere with the success of the vaccination. The degree of local inflammatory reaction was lessened, and the patients seemed less subject to constitutional disturbance. In most cases a firm, adherent, centrally depressed crust was formed by the fourteenth day. The authors consider that the liability of extraneous bacterial infection is decreased by the measure,—doubtless owing in part to the antiseptic property of the solution applied. By laboratory investigation they found, in fact, picric acid to be about four times as efficient as phenol as a local antiseptic. The common organisms on the skin were shown to be lessened in number by the application of solutions of this substance. J. F. Schamberg and J. A. Kolmer (Lancet, November 18, 1911).

VINCENT'S ANGINA, SALVARSAN IN.

A severe case of Vincent's angina in which salvarsan was used locally is reported by the authors. Both tonsils and the soft palate were involved, and all measures previously tried had proven ineffective. In view of the fact that one of the etiological agents in this affection

is a spirillum, local applications of salvarsan, first in solution, afterward as a powder, were made. A very prompt cure followed. Achard and Flandin (Gazette des hôpitaux, No. 50, 1911).

VOMITING OF PREGNANCY, TREATMENT OF.

Full observance of the hygiene of pregnancy is enjoined by the author in these cases. He recommends that the patient be given early in the morning a draught composed of magnesium carbonate, 2 drams; magnesium sulphate, 1 ounce; mint water (1:40), 1 ounce; water, enough to make 8 ounces; a wineglassful to be taken early in the morning. Cascara sagrada is often prescribed, but must be considered only as a regulator of bowel action, not as a purgative. Laxatives should be given daily or every other day as required, and cascara given daily in small doses for about two or three weeks, after which no further medication of this kind will be required.

The diet should be free of rich or highly seasoned dishes. The evening meal should be light, and is usually best composed of some farinaceous article, such as thin porridge, gruel, or arrowroot. In patients obtaining no relief from sickness until the entire stomach contents have been evacuated, and when morning sickness is obstinate, it is well to encourage evacuation by the sipping of warm water. Absolute recumbency is necessary in severe cases. Koumiss is of value as a food, and may be utilized when nothing else is retained. Champagne half an hour before a meal is also beneficial.

In the matter of drugs, one finds it necessary to run the gamut of effervescing mixtures, salicin in emulsion form, phenyl salicylate, compound tincture of cardamom in dram doses, antipyrin or acetanilide with sodium bromide, or even small enemata of chloral hydrate and potassium bromide. Cerium oxalate and cocaine are oftener useless than not. Laudanum stupes on the epigastrium, the ether spray, blistering of the cervical spine, or ice-bags applied to the same locality generally depend for their success purely on psychical effect. Wine of ipecac in hourly minim doses is unquestionably of use in some patients. The most efficient preparation is found by the author to be validol, whether the vomiting be reflex, neurotic, or toxemic. Menthol, 1 part in 60 of water, with 30 parts of alcohol or brandy, or chloroform (3 to 6 drops on sugar or in water), are sometimes useful, but are less certain in their results.

Rectal feeding has, according to the author, a psychic effect apart from its other influences, and gastric lavage acts somewhat similarly, though the latter undoubtedly is also beneficial because of the coincident hyperchlorhydria or intermittent hypersecretion.

Mental therapeutics, or antihysteroid treatment, is demanded in the purely neurotic type of vomiting. Massage, and possibly some little mystification in the shape of the application of electricity or blisters, etc., will help in the cure.

The toxemic variety of vomiting, when positively diagnosed, calls for the immediate procuring of abortion, a course never to be undertaken except after consultation with a brother practitioner. S. H. Hall (Indian Medical Record, November, 1911).

Clinical Summary

Practical hints from articles and abstracts that have appeared in the Monthly Cyclopedia and Medical Bulletin during the current year.

Anemia, Pernicious. TREATMENT. Case in a pregnant woman at term in which 4 intragluteal injections of defibrinated human blood, amounting altogether to 159 c.c., proved markedly beneficial. *Esch.* Page 44

Appendicitis, Chronic. DIAGNOSIS. Pain chiefly in right lower quadrant, if unassociated with attacks of epigastric pain and nausea, is seldom due to appendix; before diagnosing chronic appendicitis exclude every other possible condition.

TREATMENT. Appendectomy alone frequently does not cure. This is true especially of patients with chronic constipation; a long, dilated cecum, with other evidences of enteroptosis, is usually present. *Stanton.* 33

Arthritis, Gonorrheal. TREATMENT. Intra-articular injections of iodine tincture, 5 Gm. on the average, used in many cases of various types, with considerable success. Increased swelling at first, then cessation of joint effusion, disappearance of pain, and return of motion. *Hildebrand.* 37

Asthma, Bronchial. TREATMENT. Importance of chronic coprostasis and intestinal autointoxication in etiology of asthma shown. Necessity of bowel regulation in the treatment emphasized. *Ebstein.* 33

Cholera. TREATMENT. Potassium permanganate given internally with some success. Dose, 0.4 to 0.5 Gm. (6 to 7½ grains) *per diem*, dissolved in 400 to 500 Gm. of pure water and given every half-hour. Drug continued two or three days in diminishing doses. Especially valuable in cases with hemorrhage. Iodine tincture given in 42 cases, with 34 recoveries. Dose, 40 to 60 minims daily, dissolved in 250 Gm. of distilled water, given every hour. Copious bowel irrigations with warm iodine solution or 1: 1000 potassium permanganate solution also used with benefit in violent cases. *Logotheti.* 35

Colitis, Mucous. TREATMENT. Apply to abdomen at night towel soaked in magnesium sulphate solution, ½ ounce to 1 pint of water, at 75° F. Irrigate rectum with 2 gallons of same solution at 85° to 90° F. Mucus disappears, and pain and gas formation diminish. Milk diet, with fruit, especially grapes, added, also effective; 1½ quarts of milk to be taken during day and 1 pint of hot milk at bedtime; continue for ten days to two weeks. Crude tar of *Pinus palustris*, mixed with flour and ordered in No. 2 gelatin capsules, gave good results; 2 or 3 capsules one hour after meals. *Joseph.* 42

Coryza, Acute. Aromatic spirit of ammonia and sweet spirit of niter recommended as best agents to "abort" a cold. *Beverley Robinson.* 47

Diarrhea, Infantile. TREATMENT. Soy flour useful in summer diarrhea and some forms of intestinal indigestion; given in form of dilute gruel with or without addition of barley flour and later condensed milk or cows' milk. One to 2 level tablespoonfuls of soy flour to the quart suffice at first; later increased to 4 spoonfuls. Soy-bean, barley, and condensed-milk mixtures useful where, cows' milk disagreeing, there is difficulty in finding food sufficiently nutritious for child. Orange juice advisable from time to time to prevent tendency to scurvy. *Ruhräh.* 52

Empyema. TREATMENT. Convenient method of drainage of empyema in young children described. After locating pus with aspirating needle, insert narrow-bladed knife under it and enlarge wound just above a rib enough to admit snugly a short drainage-tube of rather stiff rubber, which is held in place by a cuff of slightly larger tubing, a piece of tape slipped over it, and adhesive plaster fastening tape to skin. Connect rubber tube with glass tube passing through cork of a pint bottle and dipping in warm sterile salt solution contained in it. Raise bottle till solution runs slowly into pleural cavity, then lower, thus irrigating pleura. Change salt solution two or three times daily, or as often as necessary to keep it fairly clean. *Kenyon.* 36

Gonorrhea, Acute. TREATMENT. Method causing arrest of suppuration in three to five days described. Inject 5 to 15 c.c. (¼ to 4 drams) of 0.25 per cent. protargol solution into urethra every half-hour in daytime and every hour at night. To be retained two to ten minutes, during which time urethra is gently massaged from behind forward. Increase strength of solution gradually. Patient should ingest large amount of fluid, in order to be able to urinate before each injection. Continue injections, given as often as possible, two or three weeks after cessation of pus. Then alternate protargol with lead acetate and zinc sulphate, of each, 0.3 Gm. (2 grains) in 200 Gm. (4⅔ ounces) of water. *Kuhn.* 37

Hepatic Affections. TREATMENT. Combination of sodium salicylate and sodium benzoate found useful for cholagogue and "flushing-out" effects in various disorders, especially suppurative angiocholitis, cholecystitis, and lithiasis. Sodium salicylate induces flow of concentrated bile; sodium benzoate, of dilute bile. Relative amounts of two salts to be varied according to indications. Formula

suggested: Sodium benzoate, 0.75 Gm. (12 grains), sodium salicylate, 0.5 Gm. (8 grains); sodium borate, 0.25 Gm. (4 grains); rhubarb, 0.3 Gm. (5 grains); to be taken *t. i. d. Polain-Cartier.* Page 38

Hip-joint, Congenital Dislocation of. TREATMENT. Manipulative method used in 33 cases. If used at earliest possible time after infancy, the method may be expected to yield stable articulation with perfect function in 60 to 70 per cent. of cases; in remainder condition is usually much improved. Attended by little or no danger in children below 8 years of age. *Simpson.* 38

Hyperchlorhydria. TREATMENT. Rhubarb and soda, or rhubarb and magnesia, either in mistura rhei et sodæ or in Gregory's powder, useful in gastric disorders with fermentation or hyperacidity. *Beverley Robinson.* 47

Hyperthyroidism. DIAGNOSIS. Elevation of temperature found an early symptom in many cases, especially mild ones. When, in absence of acute or other tangible disease, there have been loss of weight and augmented nitrogen and phosphoric acid excretion, and when, after administration of a thyroid or iodine preparation, there occur the characteristic psychoneurotic and cardiac symptoms of excessive thyroid activity, elevation of temperature is a thyrotoxic phenomenon. *Stern.* 39

Hypothyroidism. DIAGNOSIS. Blood showing mild leucocytosis and relative lymphocytosis with eosinophilia from 3 per cent. up is highly suggestive of thyroid insufficiency. *Collins and Kaplan.* 40

Intestinal Paresis, Postoperative. TREATMENT. Pituitary extract used in 21 laparotomy cases. Dose, 16 minims (1 c.c.), commenced six hours after operation and repeated every few hours until 18 doses given. All patients passed flatus freely within a few hours, and were free of pain and distention. In all cases but 2, bowel action was obtained after a simple enema. Three intramuscular injections of 1 c.c. each recommended during first twenty-four hours as routine practice in laparotomy cases. Pulse rate remains much lower than usual. *Bidwell.* 44

Jaundice, Catarrhal. TREATMENT. Cold injections of water or normal saline solution recommended, favoring biliary flow by promoting peristalsis. *Polain-Cartier.* 38

Laryngitis, Acute. TREATMENT. Freshly powdered cubeb, taken frequently and in moderate amount dry on tongue, found of service in acute throat disorders. *Beverley Robinson.* 47

Mastoiditis. DIAGNOSIS. A small mastoid process with thick outer cortex and small antrum is especially subject to "atypical" mastoiditis, condition escaping detection until serious complications appear. Suspicious symptoms in such cases are: 1. Discharge from ear more profuse than one would readily expect from middle ear alone and continuing profuse for two or three weeks. 2. Increased swelling of posterosuperior wall of external auditory canal. X-ray found useful for early diagnosis in a number of cases. *Crockett.* 41

Otitis Media, Acute. TREATMENT. Relation of acute pharyngitis, nasal-sinus, middle-ear, and mastoid inflammations to an "active autotoxic state" of the system emphasized. Calomel in 1/10-grain (0.006 Gm.) doses, frequently repeated up to 1 or 1½ grains, found valuable to stimulate defensive powers of body and shorten convalescence. Used in combination with local treatment. Calomel, followed by castor oil or salines, given every other day. *Snow.* 42

Pain, Local. TREATMENT. Combination of menthol and methyl salicylate in hydrated wool-fat, covered with cotton and gauze bandage, recommended to relieve local pain where skin is intact. *Beverley Robinson.* 47

Placenta Prævia. TREATMENT. Absolute quiet, rupture of membranes when required, and irrigation with hot water recommended. Water should be at 45° to 48° C. (113° to 118° F.), and at least 7 or 8 liters of it should be used. Repeat irrigation if necessary to check hemorrhage. Seventy cases thus treated without a death. Infection from tampon and mishaps in version or introduction of bag thereby avoided. When hemorrhage arrested, spontaneous expulsion of fetus to be patiently awaited. Instrumental dilatation contraindicated. *De Bovis.* 44

Plague, Bubonic. TREATMENT. Early crucial incision into the swollen glands employed in 62 cases, with 54 recoveries. Causes immediate improvement in patient's condition, temperature being lowered and headache alleviated. Wounds dressed with iodine lotion, 1 dram to the ounce of water. *Nesfield.* 45

Pneumonia, Lobar. TREATMENT. Creosote inhalations and moderate bloodletting, especially with leeches, recommended. *Beverley Robinson.* 47

Pneumothorax. DIAGNOSIS. Positive coin test, displacement of heart, and, in right-sided cases, displacement of liver are the most important diagnostic signs, occurring in about 90 per cent. of cases. Succussion splash and metallic tinkle occur in 30 or 40 per cent. *Cruice.* 46

Poliomyelitis, Acute. ETIOLOGY. Poliomyelitis is propagated by dust. Nasopharynx is probably point of entry. *Neustaedter and Thro.* 46

DIAGNOSIS. Lumbar puncture shown to be valuable in distinguishing poliomyelitis of meningeal type from acute cerebrospinal meningitis. Negativity of cerebrospinal fluid in poliomyelitis diagnostic; in meningitis, fluid shows marked turbidity, coarse clot formation, great excess of albumin, copious deposit of polymorphonuclear cells, and meningococci. *Forbes.* 46

Postnasal Catarrh in Children. TREATMENT. If condition acute, paint throat several times daily with boroglyceride, or, in older children, spray with a $\frac{1}{4}$ grain to the ounce solution of tartrated antimony while patient inspires deeply. Later, add an equal amount of glycerite of tannin to the boroglyceride. Where painting throat resisted, instill into nostril several times daily, while child lies back with head on pillow, a solution of 5 to 10 grains of resorcin to the ounce of saline solution, 10 grains of boric acid to the ounce of water, or 15 grains of sodium bicarbonate to the ounce. As redness of pharynx fades, apply pure glycerite of tannin or a paint of 12 grains of iodine and 15 grains of potassium iodide to the ounce of glycerin, with 5 drops of oil of cinnamon or peppermint. After all redness gone, use an astringent iron paint of 1 dram of the stronger iron perchloride to an ounce of glycerin. For anorexia: an iron tonic; stay in country or at seaside. Keep child well protected from cold for some time after. *Eustace Smith.* Page 34

Rheumatism, Acute Articular. TREATMENT. *Streptococcus pyogenes* vaccine used in 6 cases, in 4 of which no salicylates were given, with good results. Temperature quickly fell in every case, pain ceased, and inflammatory phenomena disappeared. Stock vaccine from several strains of streptococcus used in these cases, but author thinks it preferable to employ a mixed streptococcus and staphylococcus (*aureus* and *albus*) vaccine. *Wolverton.* 48

Rheumatism, Chronic. TREATMENT. In rheumatic conditions associated with anemia and in sore throat of rheumatic origin, following mixture recommended: Dissolve 1 dram (4 Gm.) of sodium salicylate in 2 ounces (60 c.c.) of water. Add liquor ferri perchloridi, plus an ounce of water, giving dark purple mixture. Then add 1 dram of potassium bicarbonate dissolved in 1 ounce of water, and fill up bottle to 8 ounces with water. *Drinkwater.* 51

Syphilis. TREATMENT. Salvarsan given intravenously in 10 pregnant women in doses of 0.5 Gm. and subcutaneously in 8 newborn infants in doses of 0.03 Gm. Injections in women in dose mentioned found to be not without danger to fetus, pronounced weakening in heart-sounds being noted in days succeeding injection in one-half the cases. Child of a mother given first injection of salvarsan five and one-half months before parturition was born healthy; a child born seventy-two days after salvarsan injection was syphilitic. In the newborn, salvarsan was found to act promptly on pemphigus and to cause disappearance of spirochetæ from lesions; it is capable of producing prompt and lasting recovery from hydrocephalus of syphilitic origin. Smaller doses now advocated by author: 0.2 Gm. for pregnant women, repeated in six days; 0.01 for newborn infants, repeated twice or thrice at six-day intervals. *Bar.* 49

Emulsion of salvarsan in lanolin oil found a satisfactory mode of administration in 30 cases. *Burke.* 50

Tuberculosis. TREATMENT. Tuberculin applied locally in 10 cases, comprising suppurative cervical adenitis, anal fistula, and sinuses, with early cures in previously rebellious cases. Parts first irrigated with salt solution, then tuberculin solution sprayed on, or, in sinuses, introduced with syringe and flexible cannula. Mouth of sinus sealed with collodion for several hours. Initial dose must be small; later dose is carefully increased, avoiding general reaction. Locally there is pronounced reaction at first, then stimulation of processes of repair. *Beasley.* 56

Tuberculosis, Pulmonary. TREATMENT. Citrate of iron hypodermically found very efficient in relieving the secondary anemia in 257 cases, 70 per cent. of which were advanced or far advanced cases. Employed routinely where reduction in hemoglobin greater than 10 per cent. Dose, 0.05 Gm. (⅘ grain), injected in buttock. Italian preparations found least irritating. Maximum benefit attained after 30 to 40 consecutive daily doses. *Bullock and Peters.* 32

Comparative study of 146 cases receiving tuberculin and 234 treated by hygienic-dietetic method alone. Conclusion reached that tuberculin is valuable in tuberculosis, especially in moderately advanced cases, and is of special value as a protection against relapse. Autogenous vaccines used in 75 other cases; temperature rapidly returned to normal, expectoration diminished, and hemorrhage was rare. *Pettit.* 57

Typhoid Fever. DIAGNOSIS. Russo's test found a valuable diagnostic aid in early cases. To 4 or 5 c.c. of patient's urine add 4 drops of 0.1 per cent. aqueous solution of methylene blue. After thorough admixture examine against light; a mint- or emerald-green color is positive, whereas any bluish tint renders test negative. Urines containing bile also give the test; therefore, this must first be excluded. *Rolph and Nelson.* 58

Uremia. DIAGNOSIS. Depression of reflexes and positive Babinski phenomenon found valuable as a very early indication of oncoming uremia. Present in the stage of "preuremia." *Curschmann.* 48

Vincent's Angina. DIAGNOSIS. Signs distinguishing it from lacunar tonsillitis are: 1. Absence of fever. 2. Pain more localized on affected side, and is severe, lancinating. 3. General malaise and physical exhaustion very marked.

TREATMENT. First perform gentle curettage of the tonsillar crypt involved. Then apply 12 per cent. silver nitrate solution. *Wherry.* 58

Book Reviews

THE MECHANISM OF LIFE. By Stéphane Leduc, Professeur à l'Ecole de Médecine de Nantes. Translated by W. Deane Butcher, M.D. 172 Pages. New York: Rebman Company, 1911.

Professor Leduc has presented a valuable summary of the processes of life, in this little book. It does not so much matter for the clinician what his conclusions or contentions are, eminently original and significant though they be. The phenomena of osmotic growth here considered are logically conclusive and experimentally demonstrated. No clinician, however, can afford to be ignorant of the biologic principles made clear by the author. Nowhere else in the experience of the reviewer has this been done so concisely and so well. Leduc shows that "a living being is a transformer of matter and energy," and he has "endeavored to give as much of the science of energetics as can be treated without the use of mathematical formulæ," and has dealt "with the rise of synthetic biology" and shown "how it is possible by the mere diffusion of liquids to obtain forms which imitate with the greatest accuracy not only the ordinary cellular tissues, but the more complicated striated structures." "The essential character of a living being is its form.....the task of synthetic biology is the recognition of those physicochemical forces and conditions which can produce forms and structures analogous to those of living beings" (Morphogenesis).

The last chapter deals with the doctrine of evolution, a chain of life from the mineral at one end to the most complicated organisms at the other. The definitions supplied throughout are gems of aphorism, *e.g.*, on p. 98:—

".....all the movements of the universe are the manifestations of a single agent, which we call energy. In reality all the phenomena of nature may be conceived as diverse forms of motion, and the word 'energy' is the common expression applied to all the various modes of motion in the universe. It was by the study of heat, and more especially of thermodynamics, that we obtained our conceptions of the science of energetics."

And again on p. 148:—

"Hence life is but a phase in the animation of mineral matter; all matter may be said to have within itself the essence of life, potential in the mineral, actual in the animal and vegetable."

It will prove of the utmost value to the physician, however "busy" he may be, to clarify his mind by reading this little book through carefully, and more than once. He will thus bring to light much of long-lost biologic knowledge and will be aided in systematizing what he may possess of fading impressions; he will also learn a lot he never knew, but which will prove of vast use as a key to complex phenomena passing under his experience daily. At least, let him memorize the chapter on "Energetics." It will help out many a budding generalization to bear in mind that:—.

"The synthesis of life, should it ever occur, will not be the sensational discovery which we usually associate with the idea. If we accept the theory of evolution, then the first dawn of the synthesis of life must consist in the production of forms intermediate between the inorganic and the organic world—forms which possess only some of the rudimentary attributes of life, to which other attributes will be slowly added in the course of development by the evolutionary action of the environment."

The author is to be congratulated in securing so admirable a translator as W. Deane Butcher. It is only too rarely that the spirit and feeling of the original are so well preserved.—J. M. T.

OUTLINES OF PSYCHIATRY. By William A. White, M.D. Nervous and Mental Disease Monograph Series No. 1. Third Edition. New York: Journal of Nervous and Mental Disease Publishing Co., 1911.

We have had the pleasure of reviewing the former editions of this excellent monograph, and in this third edition the author states that the changes are for the most part in the way of moderate elaboration. References to literature are introduced, and in many respects the work is evolving into a manual. This book is so clear, so readable, so breathes the spirit of well-digested experience, that it should prove of the utmost importance to busy practitioners who have little time for reading elaborate books on diseases of the mind. It is quite sufficient in its present form to be of use to specialists, although its obvious purpose is to supply the general practitioner with much needed instruction.—J. M. T.

WHAT SHALL I EAT. A Manual of Rational Feeding. By F. X. Gouraud, Formerly Chief of the Laboratory of the Medical Faculty of Paris. With a Preface by Professor Armand Gautier, of Paris. Sole Authorized Translation into the English Language by Francis J. Rebman. With a Glossary Containing Definitions of the Principal Technical Terms, and an Index of Diseases Referred to in the Text. 12mo, xvi + 379 Pages. New York: Rebman Company, 1911. Cloth, $1.50.

In this manual of dietetics the various articles of food are treated as to their composition and food value, methods of preparation, reactions, indications and contraindications, particulars and characteristics. The book contains a well-written section on vegetarianism.

The treatment of the subject-matter throughout the work is honest and practical, and is marked by an absence of dogmatism. The style is easy and pleasing—almost epigrammatic. The diction is pure and simple, making for a quick understanding of the subject-matter by layman or physician.

This volume is brimful of valuable information succinctly stated and pleasingly written. It is a reliable guide to the study of the important and vital questions in dietetics, whether we "eat to live or live to eat." He who will "read, mark, and inwardly digest" the author's words, will do so to his well-being and profit. The author is unusually favored in having secured the services of so felicitous a translator.—C. S. W.

Practical Dietetics with Reference to Diet in Disease. By Alida Frances Pattee, Graduate, Department of Household Arts, State Normal School, Framingham, Mass.; Late Instructor in Dietetics, Bellevue Training School for Nurses, Bellevue Hospital, New York City; Former Instructor at Mt. Sinai, Hahnemann and the Flower Hospital Training Schools for Nurses, New York City; Lakeside, St. Mary's, Trinity, and Wisconsin Training Schools for Nurses, Milwaukee, Wis.; St. Joseph's Hospital, Chicago, Ill.; St. Vincent de Paul Hospital, Brockville, Ontario, Canada. Sixth Edition, Revised and Enlarged. 12mo, xxx + 475 Pages, Illustrated. Mount Vernon, New York: A. F. Pattee, 1910. Cloth, $1.50.

This popular and most excellent handbook of dietetics, first issued in 1903, now appears in its sixth edition. It has been thoroughly revised and enlarged and contains, as far as space allows, the latest results of research in dietetics, and is intended to meet the exact requirements of the various State Boards of Examiners of Nurses. Part I treats of the principles of nutrition and food preparations. Part II is a practical application of the principles of nutrition and is replete with recipes. Part III contains several hospital dietaries, diets prescribed in disease, and in special conditions. The book also contains the outlines of the Course of Study in Dietetics arranged by the American Hospital Association, and those of several State Boards of Examiners. The examination questions of the various State Boards of Examiners of Nurses are also to be found in this little volume. For its size it is a most satisfactory book on the subject of dietetics.—C. S. W.

Clinical Pathology in Practice. By Thomas J. Horder, B.Sc., M.D., F.R.C.P. Oxford Medical Publications. London and New York, 1910.

This little book of 216 pages is an excellent *résumé* of modern pathological methods as applied to the diagnosis and treatment of disease. While the author does not aim to make this a laboratory textbook, it will serve a worthy purpose in giving the clinician an excellent grasp of the significance of laboratory methods and a practical conception of how to apply them in daily work. The fact that the book is not encumbered with the *minutiæ* ordinarily found will cause it to invite perusal. It is singularly well arranged and charmingly written, containing much more material that will interest the clinician than he will find in the larger textbooks. It presents the special merit of describing results which the author himself has verified in the study of his own cases and those of his immediate colleagues. The intention is not so much to supply directions for making these studies as to show how laboratory findings can be sanely interpreted.—J. M. T.

Motosensory Development. Observations on the First Three Years of a Child. By George V. N. Dearborn, Professor of Physiology in Tufts College Medical and Dental Schools, Boston. Baltimore: Warwick and York, Inc., 1910.

Professor Dearborn's little book, one of the educational psychology monographs, is of value as an extremely careful series of observations on a normal child from birth till the end of the 152d week, beautifully systematized by a finished expert in physiological psychology, including certain inductive considerations, a chronological epitome of observed development, and various first appearances alphabetically arranged. It might be interesting to mention that there are now about six or seven similar books on the market,—and more are needed, to furnish data for future findings in child psychology. This baby of Dr. Dearborn's is evidently a singularly normal individual, supplied with "proper nourishment" and enjoying excellent health throughout. The comments and reflections, while not numerous, are most judicious, furnishing enough explanation to sustain interest in reading what might otherwise be rather monotonous annals.—J. M. T.

The General Field

Conducted by A. G. CRANDALL

The School Lunch as a Moral Uplift

Physicians, educators, and humanitarians are all waking up to the importance of the school lunch.

Investigations and experiments in the Philadelphia public schools showed that a primal cause for stupidity on the part of school children of tender years who were known to come from poor families was lack of nutrition.

The small, pale, undersized child who spent the school hours in a listless inattention to that which was so absorbing to the well-fed, energetic children of the well-to-do seemed to suggest that there must be some physiological reason for the carelessness and stupidity which is so exasperating to the zealous teacher. Those who thought deeply on the subject came to the conclusion that before the child could be taught it must be fed.

As a result of this conclusion, the school lunch committee of the "Home and School League" was established, and inexpensive, but nutritious lunches were prepared for a certain school. The benefits shown in this experiment were so marked as to cause the movement to expand until it has become a thoroughly recognized necessity.

The young child at school who is so poorly fed at home as to be unable to exert the mental effort necessary to make progress with other children of the grade gives promise of becoming a very ignorant, if not undesirable citizen later on. Society has long since recognized the fact that liberal expenditures were necessary for police and fire protection. Why should not society go still further and protect itself against the development in its midst of inefficient or even criminal classes from the ranks of the underfed?

The calling of the physician is, in the very nature of things, largely humanitarian. It is natural that he should take an interest in the well-being of school children of poor families. From the professional as well as from the humanitarian standpoint, this field is a very inviting one for the earnest physician.

A Real "Mare's Nest"

Space writers in the daily newspapers have recently been very much excited over the iniquities of the sugar trust, which compelled its horses to drink enormous quantities of water just before being weighed for their daily task of hauling sugar on which a duty was to be paid.

It is certainly a pathetic spectacle to think of drivers "beating their horses with boards" to make them drink large quantities of water, and is something which will be read with amazement by most male citizens of rural origin.

While it is more than possible that a horse deprived of water for twenty-four hours might take on a pretty liberal supply of fluid, it is extremely improbable that the quantity thus acquired is regulated by anything other than his own inclinations.

An Efficient Therapeutic Agent

The Medical Record of January 27th editorially refers to the universal ignorance prevailing among great numbers of urban dwellers as to the physical benefits derived from muscular fatigue. This

writer points out plainly that only those who can become physically tired without incidental mental fatigue can ever fully appreciate the real pleasures of lying down at night to rest.

Most people are dissatisfied with their daily grind, and, should the occasion arise when the services of a physician were required, they expect not only a prescription to show for their money, but a reasonable amount of sympathy as well.

It would probably be very unconventional for the diplomatic medical adviser to suggest that the patient temporarily help to solve the high cost of living problem by, for a season, taking up farm life. Nevertheless, there is probably nothing better calculated to dispel the nervousness so commonly associated with indoor occupation than systematic muscular exercise in the open air with some real practical purpose in view, especially for the man leading the usually inactive physical life associated with office work, or even the operating of some machine in the ordinary factory.

The prejudice which exists among so large a number of city workers as regards everything relating to the farm is very detrimental to the physical and economic well-being of a great number of people.

A New Light on Mormonism

A prominent missionary of Utah recently delivered an address to Pennsylvania Episcopalians, in which he gave a new idea of Mormonism and its peculiar institution. He says: -

"We outsiders have a wrong view of polygamy. We think it is just a feast of the appetites. But to the followers of Mormonism it is something more than physical. They believe that the only way a man may reach the celestial state is having children."

This observer adds: "There are many Mormons who do not want polygamy, but, being religious, they feel in duty bound to carry out the directions of the church."

The speaker further says that it should be comparatively easy to prove the theological absurdity of the Mormon religion, but that ridicule and what they consider persecution only make them more determined to remain loyal to their faith.

This picture of Mormonism is very much at variance with that of the public in general, and especially those who have written muckraking articles on the subject for publication in the popular magazines.

Evidently, the geographical center of self-sacrifice in this country is located in Salt Lake City.

Lay Ignorance of Hygiene

In these days of universal knowledge of public events, which is made possible by the very general habit of newspaper reading, it is unfortunate that a little more light could not be thrown upon the physiological habits of those who are constantly in the public eye through their business or public associations.

It occasions no general surprise when a man, evidently in the prime of his public usefulness, suddenly lies down and dies. It would seem very remarkable to a breeder of livestock if an apparently healthy animal should suddenly drop in its stall and give up the ghost, and it should be equally surprising when this unnatural event occurs to humanity.

A prominent railway official who gave promise of developing a capacity to grasp the control of a very large area of railway properties was recently a victim of la grippe. After a few days he promptly resumed his usual activities

and soon found there was something wrong. His physician advised him to take a complete rest, which he did, at his home, surrounded by secretaries, envoys, and business consultants. The physical and nervous strain being thus unrelieved, the machinery suddenly stopped.

Now, the lay press which circulates the interesting incidents of this sudden withdrawal from life's vivid scenes makes no allusion to the extraordinary lack of common sense shown by this otherwise astute and resourceful capitalist, who was able by his superior mentality to plan a most intricate financial campaign. Of course, this man would have known better than to subject a favorite horse to any such program as he was inflicting upon himself, but, however that may be, it is not at all likely that, had he possessed a reasonable public school knowledge of physiology as it is taught or should be taught at the present day, he would have subjected the already badly strained physical mechanism that was essential to carrying out his business plans to such an unnatural and ridiculous strain.

This is supposed to be a material age, when the economic problems are paramount even to those of a physical or spiritual nature. Just how it is that a prominent man of affairs, constantly under the direction of his medical adviser, can be so deluded as to absolutely ignore all physical warnings, as is evident from the constant repetition of sudden collapses of people of prominence and far-reaching influence, is one of the mysteries which ought to be solved at an early date.

A Marvelous Conception of Cow Physiology

A very large constituent in the daily ration of the bovine "female of the species," as so aptly expressed by Mr. Kipling, in these modern days is ensilage corn. The matured corn, stalk and all, is chopped up and deposited in the silo, which should be air-tight and in the form of a tall, circular tank. A short period after the silo is filled, fermentation begins. The temperature should rise until it reaches 180°; the corn is thereby cooked, the process of fermentation is arrested, and there is available for use during the winter months a predigested, succulent food calculated to give great delight to the cow and create within her an enthusiastic desire to produce large quantities of milk.

All this is very well and in line with popular understanding so far as general interest extends, but business is business, and the manufacturer of the ready-made silo has only begun with his story when he has contributed the preceding outlines.

Cow physiology is something marvelous to conjecture. Whereas the prancing equine and his half-brother, the mule, can take their usual rations into a common sense kind of a stomach and extract from these ingredients the normal nutritive substance with efficiency and promptness; not so the cow—she must take her daily rations down into a second or third compartment, which, from the standpoint of the silo manufacturer, should contain liberal contents of ensilage. This ensilage proceeds to start up fermentation, which produces carbonic acid gas, and which, in turn, acting on the principle of the spark plug in the automobile, produces an explosion, throwing back into the upper portion of the alimentary canal the undigested contents of the third stomach. Assisted in this way by the intervention of the philanthropic silo manufacturer, the cow proceeds to enjoy her "cud" as never before. All the mechan-

ical difficulties of the process have been provided for without causing her the slightest trouble. It is all due to the benevolent influence of the ensilage. No wonder that the modern cow takes a careless view of her duties. Life at one time was stern and real for the cow, but is now one sweet song of pampered luxury.

Has Stirred up the Women

A recent decision relative to interstate traffic in alcoholic liquors, by which States acting under general prohibition laws cannot regulate interstate transit of commodities barred by State laws, has stirred up great activity among women active in the prohibition cause.

This decision, while it undoubtedly rests upon a sufficient basis of justification, cannot fail to create local animosities in a great many communities.

Those happy, serene days when a final decision by the higher court was considered to be an inspired utterance seem to have drifted back into the past with the low price of eggs and the simple and inexpensive horse and buggy. When the women set out to criticise the courts it means business.

A Recent Type of New Rich

Those familiar with the stern realities of business life have, for a very long period, held the opinion that the man of little or no capital, who was habitually disposed to avoid industrious application to business, was not very likely to become a plutocrat.

It seems, however, that there are exceptions to all rules. There has developed a set of conditions whereby a man who has heretofore failed to listen to the knock of opportunity can afterward chase up the elusive phantom and rapidly become a magnate. The moving picture show seems to involve the minimum amount of capital and capability and the maximum financial returns.

The generally acknowledged frivolousness of these entertainments provides a peculiar picture of the almost universal indifference as to what may be going on around the corner. Large numbers of these moving picture shows are doing an enormous business, and those who have made an investigation of the matter say that the results to the community cannot fail to be in the aggregate very unfortunate. It is not the serious or instructive scenes set forth which draw the crowds.

Soap-factory Journalism

When the ultraprosperous soap manufacturer with a forty-eight waist measure embarks in journalism he goes the whole figure. Accustomed to fawning subservience on the part of an army of employés working at $6.50 per, he proceeds to carry out the same autocratic policy in the conduct of his newspaper. The editorial writers soon learn that their articles must be exactly in tune with the views of the boss.

This, of course, is a vindication of the self-made citizen, who also makes soap, but at times it produces strange discords. The Associated Press, strange to say, does not seem to be overawed by the highly successful manufacturer with journalistic ambitions, and it is often hard to reconcile the straight facts submitted by the press bureaus with the fantastic versions of the same subjects presented in the editorial pages of the big privately owned newspaper.

When, therefore, the newspaper columns of a metropolitan newspaper contain reports of important events so strangely inharmonious with the editorial comment in the same newspaper, it can be usually explained on the soapmaker hypothesis.

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Original Articles

DENTAL DISEASE AS IT AFFECTS THE MIND.*

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DURING the past five years a skiagraphic study of the dental conditions of 350 or 400 patients suffering from mental aberration or defect has convinced me that dental disease among defectives and the insane is in many cases in causal rather than in casual relation to the mental condition. It is not the purpose of this brief paper to furnish a body of proof in support of this statement, but to outline the method which should guide an investigation into this relationship, with a few examples of its application.

It has long been known that insanity may be due to physical disease of various organs of the body, the brain, heart, lungs, digestive organs and many others. The knowledge of disease of the teeth as a cause of insanity dates back at least as far as the time of the eminent French alienist, Esquirol. About 1840 he described 3 cases, from his own practice, of patients who regained their reason after recovery from dental disease. Since then similar cases have been put on record by physicians and dentists. These, however, have been chance observations in patients who have recovered after relief of dental conditions. So far as I know no effort has been made until within the last few years to cure insanity by dental treatment; in fact, Esquirol closes the description of his cases by this statement, "These, however, are facts rather curious than useful, which are isolated and can never furnish any therapeutic view, nor guide the physician in the treatment of mental alienation."

Esquirol's dictum indicates for us the problem that is to be solved. It is necessary to find accurate methods of diagnosis and means of treatment thorough enough to cure. Although this in Esquirol's time was impossible, the wonderful recent progress of dental science and the discovery of the

* Published simultaneously with its appearance in, and by consent of, The Journal of the Allied Societies.

X-rays have given us the necessary means. The subject is one for observation, not for *a priori* speculation. The following histories, given in outline, may indicate some of the possibilities in such cases:—

Case I.—A woman 40 years old, thin, sallow and despondent-looking, was led into my office. She was helpless and dazed, obviously demented. Her history showed that she had formerly been well mentally and physically, although not very strong. She had been depressed, and had had occasional headaches for three or four years. She had had no toothache or other pains during this time. A year before I saw her her depression became constant, and deepened into melancholy. The headaches disappeared at that time, but she grew weaker, and began to have delusions, which steadily increased. She thought that she could never recover, and that she had been guilty of many sins. At the same time she was suspicious of her family, accused them of treating her badly, and gradually became mentally confused. Her delusions changed from day to day,

Case I.—1, Right upper fourth molar. 2, Left upper fourth molar. 3, Lower front teeth. Pyorrhœa alveolaris. 4, Right upper molar region; decay; exostosis. 5, Right upper incisor, bicuspid region; decay; abscess.

and she had no insight into her own condition; her mental power rapidly weakened. Her sleep was disturbed, and she ate little.

No mental stress or shock of any kind could be discovered in her history. There had been no mental trouble in her family on either side, except for the insanity of a grandmother. The patient had seven brothers and sisters, who, with her mother, were healthy. Her father died in old age. On examination no physical disease could be discovered, except that her teeth were in bad condition, as shown by these skiagraphs.

The decay and exostosis evident in the skiagraphs affected so many of the teeth that it was thought best to extract all of the upper teeth and two old stumps in the lower jaw.

As is usual in these cases, the earliest improvement showed itself in the physical symptoms. Within two or three weeks the patient was taking more food, had gained

somewhat in ability to sleep, and her color was better, showing an improved condition of the circulation. She had also apparently gained in weight. Six weeks after the operation she talked more intelligently, slept well, and her delusions no longer troubled her. She was decidedly more vigorous, of better color, and in fact had made a radical gain both mentally and physically. About a month later, her improvement having been steady, although slow, it was thought best to extract the remaining teeth in the lower jaw. There was a great deal of pus about the gums, and it was feared that this might be a source of trouble later. Following this operation the patient for a time refused to eat, so that it was hard to give her sufficient nourishment. She did not, however, relapse into her previous condition of dementia or of delusions. It seems probable that this refusal to eat was an attempt at suicide, such as is fairly common among the insane during convalescence. Although at times highly dangerous, such attempts, especially in previously demented cases, may be an indication of awakening intelligence and insight. The patient within a few weeks was eating well, made a continuous gain in every way, and at the last report, about two years after the operation, was in better mental and physical health than she had been at any time for many years.

Case II.—Lower front teeth. Caries; abscess; pyorrhea.

The significant feature of this case is that the patient not only recovered from her attack of insanity, but was restored to a higher plane of health than was present before the attack. Her teeth were in such condition as to have constituted a tax on her vigor for many years, possibly even from childhood.

Such cases as this are among the severest and most threatening that the alienist has to deal with. Whether one makes a diagnosis in this case of dementia præcox, presenile dementia, or melancholia with profound mental failure makes little difference.

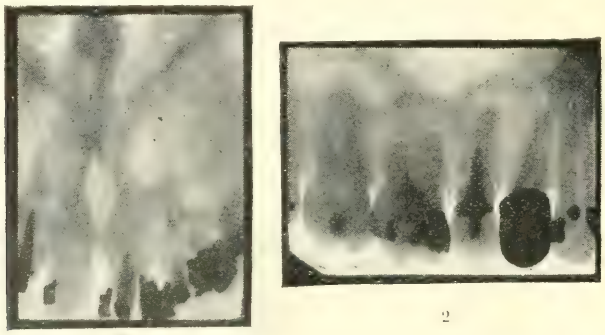
Case II.—Some time since I was asked to see a woman in the sixties, in order to give advice as to whether or not she should be confined in an asylum. Her words and actions had become queer and disordered. She was unable to obtain work, and her landlady was afraid to have her in the house. For some months she had heard voices talking to her, and had become possessed of the delusion that a pension to which she was entitled from the government was kept from her by a conspiracy. The woman was thin, pale, not robust. She was uncommunicative, reserved. She said that she felt well, and complained of no pain or other symptom except for occasional dizziness. She had had no toothache. The urgent feature of her case was that the delusions of persecution to which she was subject were likely at any time to provoke her to deeds of violence against the people whom she thought concerned in the conspiracy. This danger was felt keenly by those surrounding her, and they were insistent that she should be confined.

As is frequent in such cases, the woman presented no evidence of any particular disease, although she was feeble. Examination of her mouth showed that her few remaining teeth in the front of the lower jaw were in wretched condition—decayed, dead,

and with suppurating gums. Such teeth are sufficient, especially in the old, to account at any rate for failing health, and I had no hesitation in advising their extraction. On my advice removal to an asylum was deferred to await the result of the operation.

The first favorable indication after the operation was an admission on the part of the patient that the dizziness from which she had suffered for some months had disappeared. Within five or six weeks it was obvious that she was better mentally. She was no longer insistent in pressing claims about the pension matter, and no longer spoke of voices that had been troubling her. Her improvement from this time was gradual, but steady, and at the last report, two and a half years after the operation, she was in good mental health, and much improved physically. At her age the outlook for recovery of full vigor is not so good as it would have been ten or fifteen years earlier.

Case III.—The following is an example of the cases that often come under the eye of the dentist: About two years ago a man in the forties went to one of the ablest dentists in Cleveland, Dr. H. C. Kenyon, for dental treatment. He had not been having toothache. Dr. Kenyon saw that his teeth were badly diseased, and said to him, "Are you ever sleepless or depressed?" "Why do you ask that?" said the patient. "My wife has my revolver hidden away now, for fear that I may shoot myself when my attacks



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Case III.—1, Upper incisor region; abscesses. 2, Left upper molar region; abscess.

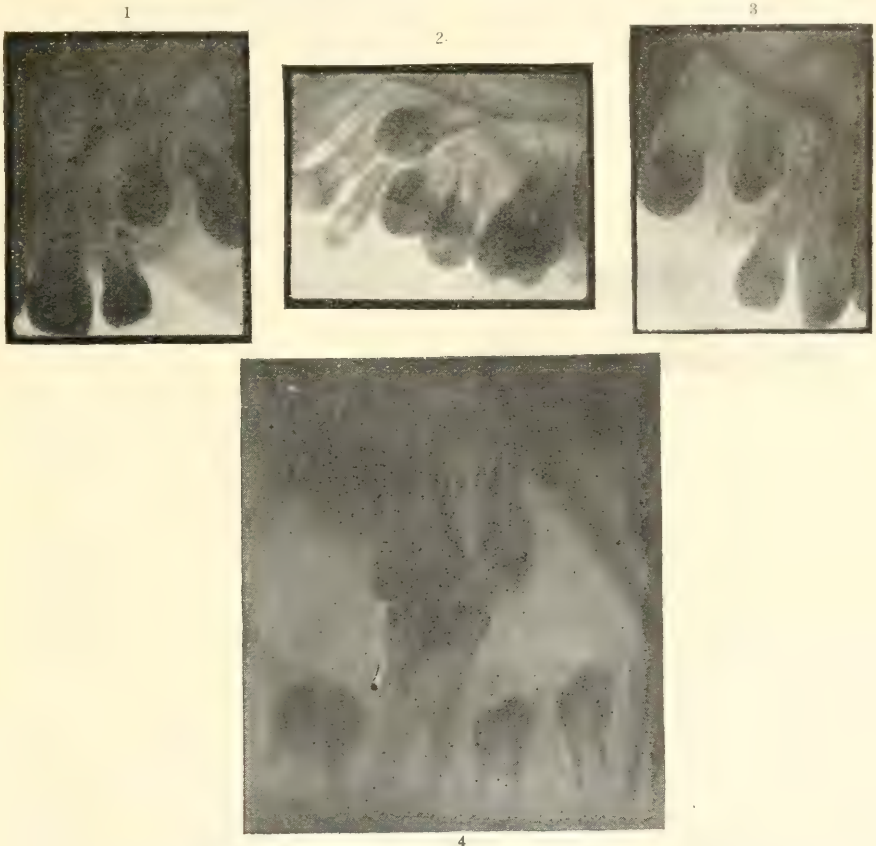
come on." It appeared that the man had been for some years a frequent sufferer from headache, insomnia, and melancholy, at times so severe as to make him desperate. Dr. Kenyon referred him to me for examination. Skiagraphs revealed multiple alveolar abscesses. On examination I could find no other cause of his symptoms. Recovery was prompt after amputation of the abscessed roots of four teeth. In this case, as in most instances, full skiagraphic diagnosis and radical treatment were necessary. The reason why these patients almost always remain unrelieved is that in such cases the dentist is consulted for the obvious dental lesions, and the neurologist investigates the mental symptoms as a separate problem. The physical and mental states are practically never confronted with each other.

Dental irritation is operative in people of all classes, and at all ages. Reactions to dental irritation in childhood are even more interesting and important than those of adults, because dental irritation is more often uncomplicated by disease in other organs, and because undeveloped minds give simpler reactions.

Before speaking of mental aberration in children, it will be well to consider one phase of the cases in adults just described, that of recurrence and relapse. It may be asked, whether in these cases recovery is permanent, or whether recurrence is to be expected in some instances. Obviously, removal of irritants is in no sense a preventive, and is not protective against future attacks. Cases of relapse are among the most

instructive for study. For this reason, instead of reporting new cases among defective children, of whom I have a number under observation, it has seemed better to describe the progress of four patients reported a year ago. These cases are chosen because since their publication[1] in two of them relapse has occurred.

CASE IV.—One of these patients was a boy 8 years old who for two years had been setting fire to buildings and stealing money, horses, and articles from stores. He had been obedient up to the age of 6½ years, was still affectionate, but for two years had been incorrigible. Moral suasion and punishment were alike useless.



Case IV.—1, Upper cuspid region one year after first operation. 2, Impaction of upper cuspid. 3, Upper cuspid region one year after first operation. 4, Left lower molar region one year after first operation.

The boy was brought to me for the solution of a purely moral problem, but I found on inquiry that during his first year at school he had done but little in his studies, and during his second year had accomplished nothing.

The dental conditions found are shown in the accompanying skiagraphs. Both upper cuspids were impacted, and there was a large filling in the left lower first molar. Otherwise the boy was normal physically. He had suffered from occasional toothaches. No connection between these and his other symptoms had been observed. The two upper first bicuspid teeth and left lower first molar were extracted in October, 1909. The molar with a large filling proved to have an abscess at the root. After the operation

[1] Review of Neurology and Psychiatry, Edinburgh, August, 1910.

his series of thefts came to an immediate end. Within a few weeks he took up his school work; he made a record of 90 to 94 in his various studies during the ensuing year, and was reported excellent in deportment. During the following summer, 1910, his mother observed a few minor infractions of the moral law, but nothing serious occurred until the middle of September. Then one Saturday afternoon he went into the business part of the town, took a horse which he found tied in front of a store, drove it to a neighbor's barn, and readily obtained permission to leave it there, stating that it belonged to him. The next afternoon the neighbor came to the boy's father to ask why no one fed the horse. Explanations followed. It was found that the owner had notified the police, telegrams had been sent to all the neighboring towns, and bloodhounds were obtained and put out to trace the thieves. The boy was severely punished, and seemed repentant. On the following Tuesday he stole some groceries that had been left on a neighboring porch, and on Saturday was brought to me for further counsel. The case was desperate, as judicial measures for reform could not be delayed if there was a repetition of such offenses.

I found the patient the same rosy-cheeked, innocent-looking boy of the year before. An investigation of the dental conditions, however, showed that caries had in the interval made serious ravages. Skiagraphs showed large fillings in three permanent first molar teeth and one bicuspid, one of the fillings, as shown by skiagraph, being apparently in contact with the pulp. The extraction of these four teeth was advised and promptly carried out. In the bicuspid the filling was in contact with the pulp. In the right lower first molar the filling and pulp were separated by the thinnest possible lamina of dentine.

After this second operation the patient suffered from a good deal of pain in the jaws, was nervous and subject to some aberrations of which I have no definite account. He made a gradual improvement, however, and during the whole time of this moral relapse did well in his studies. The following letter from his father gives a statement of his condition up to the time of the last report in September, 1911:—

"Pardon delay, but have been away and very busy. Mrs. ——— was at hospital during summer for severe operation. Now home and hope for recovery.

"——— passed to advanced grade in school last year, and is now in school and doing quite well. During summer was on farm, worked well. Has grown and has shown none of his former tendencies since early in summer and not bad then. Is obedient, loving and seems to want so much to please us, a little nervous at times.

"Thank you for interest. Glad to hear from you."

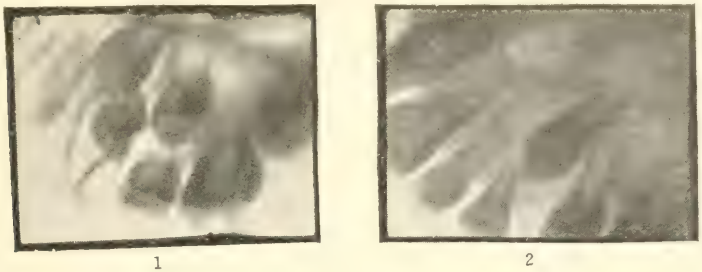
In these two operations, and especially as a result of the last one, the boy's dental welfare suffered severely. More conservative measures would have been followed if they had been possible. Although loss of so many teeth in childhood is to be deplored, the choice lay between that disaster and a more serious one.

Such stirring episodes in a child's career, following a normal infancy and early childhood, are sometimes transient, and as the popular saying is, "are outgrown." More often, however, they mark the beginning of a permanent moral or mental breakdown, running its course under the label of one or other of its leading symptoms, and are finally classed as imbecility, insanity, or epilepsy.

Case V.—Another of the patients was a little girl 9 years of age who, in marked contrast with the preceding one, was obviously an imbecile. She was undersized, with a small, defective-looking head. She was restless, unable to concentrate her attention on anything, and had been entirely unteachable both at home and in school. She answered the simplest questions in a stupid and unsatisfactory way. She had not suffered from either toothache or other pains. Other important details of her case made it a somewhat complicated one, but cannot be given here.

The accompanying skiagraphs show impaction of an upper cuspid against the first bicuspid tooth on each side. Following extraction of the temporary first molars and of the first bicuspid teeth in the upper jaw, to relieve impaction and allow the

cuspids to come down, the child became quiet, attentive, and made fair progress in reading and in her other studies at school. She showed increased intelligence at home, and for the first time began to play normally with other children. This improvement continued throughout the school year. During the following autumn, the mother was confined to the house by sickness and a severe operation. On her recovery, after the



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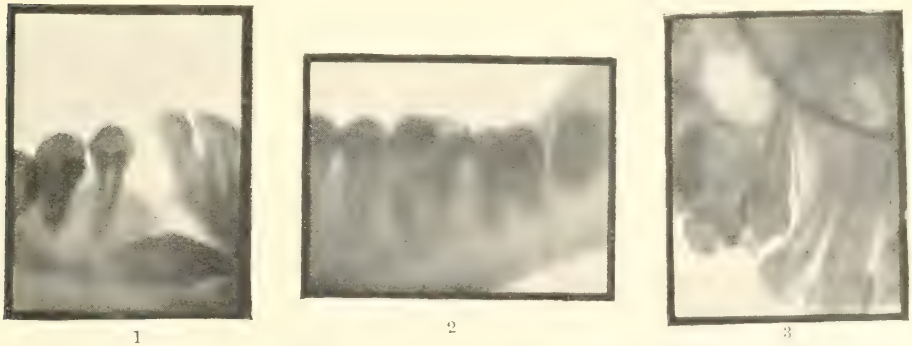
Case V.—1, Impaction of right upper cuspid. 2, Upper cuspid region about a year after operation (extraction of first bicuspid).

lapse of three or four months, she found that the child had been subjected to sexual abuse by boys in the neighborhood. As a result there were deep ulcers in the vagina, obviously causing great irritation. The child was nervous, and, in fact, under the stress of this renewed irritation was in complete relapse. This occurred during my absence from the city, and the child was removed to an institution, where she will be given an opportunity to recover from the effects of this terrible misfortune.

Case VI.—Another patient was a girl of 12, who had been normal until 3 years of age. Since then she had been nervous and inattentive. It had been impossible to teach her either in school or at home; she sat about the house in a stupid condition, and refused to play with other children or to do even the lightest housework. She had occasionally had mild toothaches. Her case had been diagnosed as imbecility at one of the dispensaries.



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Case VI.—1, Impaction of left lower cuspid. 2, Lower third molar at right angle to second molar. 3, Impaction of left upper cuspid.

The accompanying skiagraphs show an impacted cuspid tooth deep in the lower jaw pressing on the root of the lateral incisor at a right angle, an impacted upper cuspid tooth, and a lower third molar tooth at a right angle with the second molar. Operation on this patient was unusually difficult, and would have been impracticable without ether or, what is much better in these cases, the Teter apparatus for administering nitrous oxide and oxygen. The lower cuspid and third molar were extracted,

and a bicuspid removed from the upper jaw to make room for the impacted upper cuspid. Operation on this patient and on the others described in this paper were carried out by Dr. Charles K. Teter, with the exception of one performed by Dr. D. H. Ziegler.

Following the operation there has been marked improvement in the patient's mental condition. She is enthusiastic in playing with other children, does such housework as making beds and setting the table on her own initiative, and is generally alert and active. Severe headaches to which she was subject every week or so have disappeared since the operation. This improvement persists and is apparently increasing at the last report, two years after the extraction of the impacted teeth.

Case VII.—The remaining patient among the four children was a boy 9 years old, who was irritable and always hard to manage. He did things well with his hands, but made no progress at school, and his speech was imperfect. He showed little command of language, and had a lisping articulation. A history of only one attack of toothache could be obtained. This had occurred four months previously, and had lasted about a week. Skiagraphs showed a right-angled impaction of the first bicuspid

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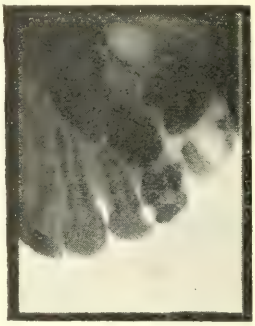

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Case VII.—1, Impaction of right upper second bicuspid. 2, Right upper cuspid region some months after extraction of bicuspid.

on the left side of the upper jaw, and of the second bicuspid on the other side. This condition was relieved by extraction in July, 1909. Marked improvement in the nervousness and irritability was noticed soon after the operation, followed by increased power of attention and freer speech. Mental and physical improvement was still well marked a year after the operation. Since then the patient has drifted away from observation.

Necessity for Thoroughness.

The attaining of curative results, in fact of any therapeutic results, in cases of nervous and mental disorder, whether mild or severe, is dependent on thorough diagnosis and complete elimination of irritants. Of this fact it will be sufficient to give two instances.

In diagnosis, in addition to ordinary methods of inspection full skiagraphic study of the jaws is always necessary. The possession of thirty-two well-placed teeth, or of no teeth at all, is no indication that skiagraphs can be dispensed with. A patient was brought to me in the full vigor of adolescence whose only indications of disease, aside from slight headaches, had been during the preceding year difficulty in concentrating the mind on its

ordinary problems, and a subtle change in morale. This latter consisted in a growing disregard of family ties, and decrease of the affections,—a mental status common in the early stages of dementia, whether infantile, precocious, paretic, or senile. Absence of organic disease, with teeth normal except for a few fillings, seemed to indicate, as did the mental symptom-complex, a disorder purely psychic. Skiagraphs, however, showed a fourth molar, small, but impacted against the second molar at almost a right angle. Complete relief followed the extraction of the impacted teeth.

The necessity for thoroughness in treatment is indicated by this extract from a letter received some time ago from a patient. She says, "Following your advice, in May I had my third upper molar extracted (which was impacted but not yet through the gum). This brought no apparent relief in any wise. Again following your advice, in June I had the second upper molar tooth opened and the nerve taken out." This tooth contained a large filling in contact with the pulp chamber. "This proved a great blessing, for I had immediate and absolute freedom from the headaches which before were so frequent and severe." These headaches have not recurred after the lapse of several years. Such a case shows that it may be, and often is, useless to relieve an obvious lesion, while leaving an obscure one behind.

In addition to the cases just described I have previously put 30 others on record. In a series of observations, the earlier cases should serve as a basis for preliminary conclusions, to be confirmed or rejected by further experience. It seems worth while to consider the characteristics of these cases, and if possible to draw from them inferences which may serve to guide further research, and to determine methods of procedure in future practice.

In considering in brief the features common to greater or less numbers of the cases, I shall take the liberty of using the cases described in earlier papers as well as in this one. A good deal of information may be gained by studying the cases from different points of view with reference to the mental symptoms, then according to the location of the lesion, the varieties of irritant lesion, etc.

Selection of Cases for Investigation.

There are many people who are nervous and deranged because of lesions other than dental, as well as because of diseased teeth, and many whose dental disease is as yet nervously well borne. Success of an investigation will, therefore, depend on selection of the cases to be observed. Cases of paresis, of insanity due to syphilis, brain tumor, organic heart disease, and many other physical disorders can only be distinguished from those due to dental irritation with any degree of certainty by diagnostic physical symptoms. In children it is especially necessary to exclude cases of cretinism and organic brain disease. A careful medical examination is therefore necessary, to eliminate aberrations of physical, but non-dental, origin.

The majority of patients in private practice are not cases in any way experimental, but are human beings appealing for help. Many have suffered from severe symptoms for years, and are in various degrees demented. They

are of all ages from childhood to old age. Operation is often advisable even as a forlorn hope. Many of those beyond cure show prompt and lasting improvement after operation. An investigation, however, should at the beginning deal with cases adapted to demonstration of the underlying principles involved. Selection should be made from patients not usually recoverable, and suffering from clear-cut simple lesions. The more hopeless mental disorders of childhood and adolescence, viz., imbecility and dementia præcox, are among those furnishing the most striking examples of prompt improvement and ultimate recovery. These cases, however, should be characterized by aberration, not by extinction, of mental power.

In selecting cases of moral aberration for investigation, it is necessary to distinguish between the merely vicious and the morbid. Removal of irritation has put so prompt and decisive an end to crime in several instances under my observation as to make it seem as if such treatment might be a cure for wrongdoing. Obviously this cannot be the case. Clear thinking on the principles involved is necessary if one is to avoid disappointment in dealing with the individual patient.

Confusion of thought with regard to responsibility for crime arises largely from the idea that wrongdoing is abnormal. On the contrary, what we consider as wrong, and even criminal, is often a natural phenomenon, the ordinary reaction of a healthy individual. Incorrigibility, however, is abnormal, and, I believe, always abnormal. Normal man is simply a human being endowed with the average inclination to virtue and the average resistance to vice; with not more than the usual clearness of perception in distinguishing between the good and the bad; but corrigible by rewards, punishments, and good example. It is failure to react to the motives for right conduct successful with the ordinary individual that distinguishes morbid from ordinary criminality. Among children the incorrigibles, the nervous, sleepless, and those with impulsions and obsessions, are among the best for trial of dental therapy. The cases of moral aberration that I have dealt with, seven or eight in number, which have shown such improvement as to constitute practical recovery after removal of dental irritants, have been in patients surrounded by ample incentives to right conduct.

In selecting cases with reference to the dental lesions, cases of impaction give, on the whole, the readiest answer to the questions that arise in regard to the psychoses, for several reasons. They involve severe irritation, often painless, and usually not complicated by toxic action. They show by the diversity of their effects the symptoms which may be considered as of peripheral and not of central origin. They may be relieved safely and comparatively easily.

Neither Kind nor Location of Lesion Determines the Clinical Type.

The patients who have promptly recovered or greatly improved have shown widely differing forms of aberration, including not only mania, melancholia, and other emotional disorders, as well as mental and moral defect

in children, but also dementia as it occurs from adolescence to senility, and paranoid forms of insanity.

There is no difference in the purely mental symptoms to indicate the location of the lesion. No specific symptoms result from impaction of third molars, as compared with the same condition of the cuspids, or from the latter, as compared with the same condition of the bicuspids or incisors. Patients have recovered from obsessions, from melancholia, and from incipient dementia, alike by relief of lesions of third molars, of lesions confined to the cuspid region, and of lesions distributed more widely through the jaws. Considering any region, the consequences of its disease vary in different patients and at different ages.

If, instead of considering the lesions one by one and tracing their results, we single out each symptom-complex and look for its cause, the result will be the same, no matter what psychosis is selected. The causes of each and every symptom or symptom-complex in mentality are variable, multiple and diverse.

Let us take agitated melancholy for example. My records show cases due to impaction, to abscess, to simple caries; due to dental disease, digestive disorder, disease of uterus and ovaries. The list might be increased almost indefinitely.

This principle is recognized by physicians generally in their daily practice. No man distinguishes melancholy due to heart disease from that of chronic Bright's by the mental symptoms. Diagnosis is only possible by listening to the sounds of the heart and analyzing the urine. The same thing is true of maniacal excitement and of aberrations characterized by morbid fears and by delusions and hallucinations.

The most that can be said, then, of either location or kind of lesion as determining varieties of mental symptoms is a statement of probabilities. Indigestion may make more people irritable or depressed than happy, just as heart disease is the cause of more morbid anxiety and fear than of elation, and pulmonary consumption probably has hope and cheerfulness as a consequence, rather than depression. But these are matters of frequency, and do not show a specific mode of reaction.

Absence of Pain is No Proof that a Lesion is Harmless.

Essential in handling these problems is a full and comprehensive grasp of two facts, viz., that pain is a symptom and not a lesion, and that dental irregularity in the form of impaction is a lesion and not a symptom. The doctrine of the harmlessness of lesions is losing ground rapidly. Dental irregularity may be harmless; but when a tooth is driven head on against the peridental membrane of a neighboring tooth, richly innervated, dental irregularity takes on a new aspect; it becomes a lesion, and is to be reckoned with accordingly.

Suppuration and decay are no better in the teeth and jaws than they are in other parts of the body. An alveolar abscess is always a menace, always a source of greater or less toxemia, with deleterious results on kidneys, heart

and blood, as well as the digestive tract; but when, as often, it is pent up, with no outlet into the mouth, it takes on in addition an irritant quality like that of the small amount of pus constituting a felon. It is then not only harmful to the general health, but often early disastrous to nerves and brain.

That painless lesions do harm is apparent in the series of cases under consideration. Even in the individual case it is evident that aberration, insomnia, psychomotor restlessness and the like are not dependent on pain, since they do not vary with it, disappearing as it diminishes in intensity. Whether one studies marked insanity, in which pain is commonly absent, or ordinary cases of toothache, in which the mind is often indeed disordered, but as a rule comparatively slightly, it is equally evident that the nervous and mental symptoms usually either part company with pain or vary in inverse proportion with it. The patient with toothache is sleepless, restless, despondent, at times when the pain is not in evidence; in dementia præcox and other severe insanities local pain is often absent throughout the course of the disease, or early disappears. The lack of definiteness of proportion between the pain and the other symptoms shows that they have among them no relationship of cause and effect, but that in mild as in severe cases the mental state is directly dependent on the lesion.

Insanity a Result of Peripheral Irritation.

It is often assumed that in order to affect the mind a noxious agent must reach its organ, the brain. This assumption leaves out of account the fact that the peripheral nerves, the prolongations of the brain, have as the reason of their being the bringing of mental faculty into contact with the body and the outer world. Nerve-fibers bring irritation, but not the irritant, to the brain.

Aside from this—a theoretical consideration—the appeal to experience shows that the distant noxious agent is as disastrous in its effects on the mind as is the poison which circulates. Psychoses due to the pure irritation of impaction are in no way different from those due to alveolar abscess, and critical study of suppurative processes shows that not the quantity of the absorbed pus, but its situation as an irritant, is the determining factor in its effect on mentality. A little pus confined or acting on a nerve as it enters the root-canal is at times responsible for the severest nervous and mental derangements.

Conclusions.

The key to the mystery of the familiar association of nervous and mental disorders with irregular and otherwise abnormal teeth lies in the thoroughness of the diagnosis and completeness of elimination of the corresponding lesions.

That dental disease furnishes a peculiarly favorable field for research is owing to the fact that it is common and usually causes severe chronic irritation, and that the lesions may be actually seen and watched by aid of the X-ray.

Neurologists are daily seeing patients of sensitive nervous organization whose mental balance has been overthrown. The sufferers shrink from pain and avoid the dentist. Many of them have mouths filled with pus and jaws

riddled with it, with teeth decayed to the pulp, impacted and exostosed. Study of irritant processes in the body generally, whether by injurious mechanical conditions, intoxications or disease, reveals their great effects on mentality. The relations existing between suppurative lesions and misplacement and decay in the jaws, in a series such as that under discussion, seem to indicate that here, as in other parts of the body, thorough elimination of such lesions is desirable, in fact necessary, for the preservation or restoration of mental integrity.

CHRONIC ACETANILIDE POISONING A PERFECTLY DEFINITE SYMPTOM-COMPLEX.*

By HERMON C. GORDINIER, M.D.,
TROY, N. Y.

It is not generally recognized by the profession that the ingestion of the aniline derivatives of the antipyretic group is capable of producing profound pathological changes in the blood vascular system, with the production of a perfectly definite symptom-complex, nor is it a well-recognized fact that one of these products, acetanilide, because of its cheapness and extreme toxicity, and of the fact that it is the chief constituent of many of the so-called headache or neuralgic powders or tablets commonly dispensed over the counter both by pharmacists and the ordinary country storekeepers to the laity, is not only responsible for most cases of poisoning by this group, but also for the production of a drug habit or addiction in every way comparable to that of opium or alcohol. If we stop, however, to consider the large number of secret nostrums on the market containing as their chief ingredient acetanilide which are dispensed without prescription for the cure of headache, neuralgia, neurasthenia, and the like, the marvel is that chronic poisoning or acetanilide addiction is not an exceedingly common complaint, rather than the rare condition that a study of the literature would lead us to suppose. The symptoms excited by the continued ingestion of acetanilide are so characteristic and highly suggestive of poisoning by this drug that it seems rather unusual to note that many of the cases of chronic acetanilide poisoning or addiction recorded in the literature have been entirely overlooked by competent observers, the condition being diagnosed as cardiac disease, tuberculosis, polycythemia, neurasthenia, mediastinal growths, and the like. This error in diagnosis, I believe, is made possible, as in most instances of drug addiction, by the patient's deception.

A study of the cases recorded in the literature and those hereinafter to be reported proves that the ingestion over a considerable period of time of acetanilide or related coal-tar products is productive of a definite symptom-complex which is highly suggestive, if not absolutely diagnostic, of poisoning by this group.

The subjective symptoms are great general weakness, nervous excitability, insomnia, loss of appetite, digestive disturbances, palpitation, dyspnea, numb-

* Read at the Twelfth Annual Meeting of the American Therapeutic Society, held in Boston, Mass., May 11, 12, and 13, 1911.

ness and weakness of the extremities, pain in the region of the liver and spleen, and faint attacks.

The chief objective symptom is cyanosis, which is often extreme, but usually fluctuating in intensity, accompanied by marked pallor of the mucous surfaces and without clubbing of the fingers.

The blood-changes are quite characteristic, and due to the destructive action of a hemolytic poison circulating in the blood-stream, which produces a secondary anemia variable in degree. The erythrocytes are diminished in number; they often present nucleated forms, show granular stippling, stain poorly, and are variable in size and form. There is usually a moderate leucocytosis of the polymorphonuclear variety, and there is often a relative increase of the lymphocytes. The appearance of the blood as it stands upon the finger-tip or the ear is very suggestive; it is either of a bluish-black color or chocolate in appearance. The coloration of the plasma renders the estimation of the hemoglobin quite difficult. Most observers state that the hemoglobin is diminished, which I believe is true; but I must confess with Stewart that it is almost impossible in these cases, owing to the coloration of the plasma, to measure the hemoglobin accurately.

The spleen has been found enlarged in most of the well-observed cases, and it is usually tender both on palpation and percussion. The liver is slightly increased in size and is also tender on pressure.

The heart is usually found enlarged, the transverse diameter being increased and the apex beat displaced downward and outward. The heart sounds are feeble, and adventitious murmurs are frequent. Systolic mitral and tricuspid murmurs are common, as are basic systolic murmurs. These murmurs are probably dynamic in origin and due to the loss of tonicity of the heart muscle, as they disappear *pari passu* with the diminution in size of the heart and improvement of the blood on the withdrawal of the acetanilide. The mitral and tricuspid murmurs are doubtless caused by relative leakage, while the basic murmurs are hemic in origin.

The urine is usually dark brown or black in color, and gives the characteristic indophenol reaction. It may contain blood-pigments in the form of methemoglobin or hematoporphyrin. Bilirubin is common, and glycuronates may be present. It is interesting to note that the ratio of the sulphates has been found reversed. In my first case the ratio was 16 to 1, only a comparatively few milligrams of the oxidized sulphur being eliminated in the form of inorganic sulphates. Dextrose was found in both of my cases, and probably exists in small amounts in most cases.

I have been unable to find any mention in the literature of trophic changes in the way of ulcerations of the skin, such as occurred in my first case. That these ulcerations were due to the effects of acetanilide seems probable, as most other causes could be excluded.

The diagnosis of chronic acetanilide poisoning should be attended with no great difficulty provided we are mindful of the fact that when this drug is circulating in the blood-stream it acts as a most virulent hemolytic poison and creates the complex of symptoms above narrated. It is quite obvious, however,

that in our differentiation we must exclude those diseases which are accompanied by more or less persistent cyanosis, namely, congenital heart defects, grave cardiac insufficiencies, certain pulmonary diseases, arteriovenous aneurism, and chronic cyanosis with polycythemia. All of these conditions may in turn be differentiated by a most careful and painstaking examination; but in order to determine the presence of the last-named disease, we must in addition make repeated blood counts and hemoglobin estimations. It is, indeed, very probable that some of the reported cases of chronic cyanosis with polycythemia have actually been cases of chronic acetanilide poisoning, having, as in the case of Cabot's and in my first case, a temporary, but very decided polycythemia. It is a fact that the symptoms created by the ingestion of acetanilide mimic very closely those common to polycythemia. The differentiation, however, between these two conditions may easily be made if we remember that acetanilide and allied products are excreted with the urine, and may be detected by appropriate and simple tests.

In conclusion, I would state that it is extremely interesting to notice the rapid improvement of the patient which follows upon the removal of the drug. Within a few days the cyanosis gives way to a distinct pallor of the skin and mucous surfaces. The urine no longer is dark brown, the indophenol reaction is absent, and blood-pigments cease to be found. The blood is rapidly regenerated; it loses its dark-purple color, and the hemoglobin content and red-cell count rise rapidly to normal. Associated with this improvement in the blood is a diminution in the size of the liver and spleen, together with a marked diminution in the size of the cardiac area, improvement of the tone of the heart sounds, and a diminution or loss of the cardiac murmurs. With these changes the appetite soon returns, the mentality clears, the nervous excitability disappears, the nutrition improves, and the gain in flesh and strength soon restores the patient to the normal.

The first case to which I wish to direct your attention is one of chronic poisoning the result of the acetanilide habit extending over a period of four years, and due to the ingestion of a compound acetanilide tablet containing 5 grains of acetanilide. The patient was in the habit of taking 10 to 15 of these tablets daily, thus receiving a daily dose of from 50 to 75 grains of the pure drug. She took these tablets secretly for about four years, obtaining them from a nearby druggist. It was not until her second visit to the hospital, however, that the habit was discovered, and then only by accidentally finding the tablets among her belongings. She very reluctantly confessed, and it was with much difficulty that we were able to learn the exact daily dose which she had been in the habit of taking.

Immediately upon the withdrawal of the drug, her cyanosis disappeared and the circulatory symptoms began to improve, and within a fortnight the bluish-black discoloration of the blood could not be seen. The urine assumed its normal color; the liver and spleen ceased to be tender and gradually diminished in size to the normal. She developed, however, great nervous excitation, suffered from insomnia, lost her appetite, presented a fine tremor of the extremities, and stated that she had a fearful craving for the drug, felt sure she

could not live without it, and knew that she would relapse again upon leaving the hospital. She remained in this nervous state for a period of about three weeks, when the craving for the drug gradually disappeared, and on her dismissal from the hospital the desire for it had ceased.

The patient first consulted me Sept. 5, 1906, when I made the following notes: Very cyanotic, no edema, spleen palpable and tender, apex beat in fifth interspace ½ cm. to the left of the left mammillary line, systolic apex murmur conducted to the left axilla, moderate emphysema, no râles; pulse rapid, easily compressible; vessels not thickened, systolic tension 130 mm. Hg.

The red-cell count was 9,200,000. On Sept. 9th, the red cells had diminished to count 7,500,000. The stained specimen showed no apparent leucocytosis, no nucleated red cells, considerable deformity of them, but no polychromatophilia. The blood was of a dark-purple color, and it coagulated rather slowly. The urine was very dark brown; it contained no albumin, sugar, or free blood-cells. The patient denied absolutely having taken any drug for pain.

The cardiac condition being insufficient to account for the intense cyanosis, I was led, in consideration of the enlarged and palpable spleen, the chronic cyanosis, the high red-cell count, the peculiar coloration of the blood and urine, and the apparent high hemoglobin value, together with an absolute denial of the taking of any drug whatever for pain or otherwise, to the probable diagnosis of chronic cyanosis with polycythemia, due to some hemolytic agent circulating in the blood-stream, possibly intestinal in origin, and perhaps similar to that in the case recently reported by West.

My attention was again directed to the case July 14, 1908, when she entered my service at the Samaritan Hospital and presented the following history:—

Miss Elizabeth G., aged 30 years; a postal clerk by occupation. Complained of great weakness, palpitation, faint attacks, dyspnea on exertion, and a peculiar fluctuating bluish coloration of the skin, lips, and fingers. Her family history is without import.

Personal History.—She has had all the diseases of childhood. Had a right-sided pleurisy three years ago. The menstruation was established at 15 years of age; it has been irregular, very scanty, and with much pain. For the past two years it has been of an unusually dark color, and of the consistency and appearance of thin tar. She was operated on six years ago for a movable right kidney. For two years she has had recurring faint attacks, with marked dizziness, tinnitus, nausea, and vomiting. During these attacks her vision gradually becomes dimmer, until she is almost blind. She has never lost consciousness. She has noticed at the time of the occurrence of the attacks that the bluish discoloration of the skin is most intense. She denies emphatically having taken tablets or powders for the relief of pain or headache. Recently she has had severe neuralgic pains in the region of the spleen.

Examination.—She is slightly built, somewhat emaciated, and very cyanotic. The coloration resembles most closely that seen in cases of morbus cœruleus. There is a distinct fullness of the face, but no apparent edema; the lips, ears, fingers, and toes are almost purple. Her conjunctivæ are pale and cyanotic, and the skin of the whole body is a bluish black. There is no edema of the extremities, and no clubbing of the fingers or toes. The buccal and pharyngeal mucous membrane is very pale; the tongue is blue and is coated with a whitish fur.

Lungs.—Apart from the evidence of a slight degree of pulmonary emphysema, nothing abnormal was detected.

Heart.—The apex beat is palpable in the fifth intercostal space 9 cm. to the left of the midsternal line; no friction or thrill can be detected over the precordium. A distinct systolic epigastric pulsation is present. There is no tugging or Broadbent sign. The vertical cardiac dullness begins at the fourth rib, and the transverse dullness begins at the right edge of the sternum and extends 12 cm. to the left. A soft, blowing, systolic murmur, having its point of maximum intensity at the apex and conducted to the axilla, is heard. The murmur does not totally replace the first sound. A softer systolic murmur is also heard, localized to the tricuspid area. The pulmonic second sound is accentuated. A systolic murmur is heard in the carotids and subclavians and over the abdominal aorta. No basic murmur is detectable. The pulse is soft, regular, rapid, and easily compressed. The vessels show no evidence of thickening; the systolic blood-pressure is 120 mm. Hg. There is no visible pulsation of the jugular veins.

Spleen.—The dullness of the spleen in the midaxillary line is at the level of the fifth rib; it extends downward and inward to the costal border. The organ is easily palpable and is of firm consistency; its border is not irregular, but it is quite tender both on palpation and percussion.

The *abdomen* is symmetrical, and it is generally tympanitic. There are no enlarged veins. In the right loin there is a scar, the result of a transverse incision 14 cm. in length, the coloration of which is of a dark purple.

Bones.—Percussion of the ribs, sternum, and long bones of the extremities brings out considerable tenderness. There are no enlarged lymph-nodes.

Nervous System.—The cranial nerves: The pupils are midwide, equal, responsive to light and accommodation. They act consensually, and respond actively on each side to irritation of the cervical sympathetic. The visual fields are not contracted. Rotation of the eyeballs is normal. The media are clear, and the optic disks, although pale, appear normal. The face and tongue muscles functionate normally.

The motor power is normal. Although the patient complains of numbness in the hands and feet, there are absolutely no objective sensory disturbances, no ataxia; the sense of position is normal, and there is perfect preservation of the stereognostic sense. There is no Rombergism.

Reflexes.—The deep reflexes are lively; no true clonus or Babinski sign exists on either side. The superficial reflexes are normal. The mind is perfectly clear.

Blood.—The blood as it stands on the ear or finger is of a bluish-black color. The red cells stain well. There are no nucleated red cells; slight deformity exists, but there is no definite poikilocytosis. No remarkable differences in size of the red cells is present. The blood-count showed 2,142,610 reds and 7000 whites. Differential count of 500 whites showed: Lymphocytes, 36 per cent.; polymorphonuclears, 60 per cent.; eosinophiles, 3 per cent.; transitionals, 1 per cent.

It was impossible accurately to measure the hemoglobin because of the coloration of the blood; it appeared, however, to be 100 per cent. plus.

The *urine* is of a dark-red color, which darkness increases on standing. The specific gravity is 1030; the reaction is neutral; it contains no sugar, albumin, or blood-cells; with the benzidine test no reaction for occult blood occurred, and with the Zeiss hand spectroscope no absorption bands were detected. Prof. Holmes C. Jackson kindly examined the urine for hemoglobin or its derivatives, and found none.

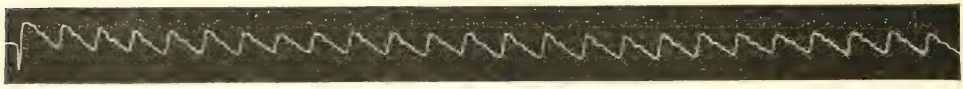
Although the patient remained in the hospital for three months, there was no material improvement in her general condition. The cyanosis; the enlarged, painful spleen; the cardiac dilatation, and associated murmurs were unaltered.

A blood-count taken just before her departure showed the following: Red cells, 2,700,000; white cells, 7800. Polymorphonuclears, 62 per cent.; large lymphocytes, 16 per cent.; small lymphocytes, 20 per cent.; eosinophiles, 1 per cent.; transitionals, 1 per cent.

There were no nucleated red cells, no great deformity of them, and they were nearly uniform as to size. The average systolic blood-pressure, deduced from a large number of observations, was 110 mm. Hg.

The sphygmogram which I pass about shows quite well this low tension. The urine remained of the same dark color, and showed no occult blood or spectroscopic evidence of hemoglobin or its derivatives.

The patient re-entered the Samaritan Hospital October 5, 1909. She is in every way worse: there is much general emaciation, the cyanosis is intense, and her appetite is poor; she states that she had slept badly; she seems very morose and apathetic, and she is in an extremely melancholy frame of mind.



Sphygmogram. Miss G. Polycythemia. Arterial tension 130 mm. Hg. Tracing from left radial. Radials showed no change when arms were elevated above head.

October 26, 1909, the following notes were dictated: The patient's skin and mucous surfaces are deeply cyanosed; the face is distinctly swollen; there is no edema of the extremities, but they are very cold. Over the anterior surface of the left tibia is a sharply circumscribed area of necrosed tissue, the result of a previous bruise; it shows no tendency to heal, and presents unhealthy granulations; its coloration is dark blue. A small depressed scar, the result of an ulceration, is present on the lower part of the left pinna, and a larger one of the same character is found in the scar resulting from her previous operation for anchoring the right kidney.

Heart.—A distinct epigastric pulsation is present. The apex beat is in the fifth interspace, 1 cm. to the left of the left mammillary line. A systolic murmur is heard at the apex, and transmitted to the left; it is quite as well heard at the junction of the fourth rib with the sternum. A very soft systolic murmur localized to the tricuspid area is heard. A systolic pulmonic murmur is also present. A venous hum is detectable, especially in the vessels of the left side of the neck. The pulse is soft, regular, easily compressed, and 90 per minute.

The *liver* dullness begins at the fifth rib, and extends downward 1½ cm. below the costal border. The liver is palpable and slightly tender; its lower margin is smooth.

The *spleen* dullness begins in the midaxillary line at the sixth rib, and extends downward and inward 1 cm. below the costal arch. The spleen is easily palpable and very tender.

The *abdomen* is somewhat tender, but otherwise normal. The uterus and adnexa appear normal. The menstruation is scant, very dark, and of a tarry consistency.

The cranial nerves functionate normally. The retinal and optic disks are devoid of any pathological change. Motion and sensation are normal.

A blood examination made by Dr. Carey, pathologist to the hospital, showed the following: Red-cell count, 3,840,000; white-cell count, 9720; smears showed moderate variations in the size of the red cells, but very little deformity; no nucleated red cells, no stippling.

Differential count: Small mononuclears, 21.5 per cent.; large mononuclears, 5.5 per cent.; transitionals, 3 per cent.; polynuclears, 68.5 per cent.; eosinophiles, 0.5 per cent.; mast-cells, 1 per cent.

The urine is dark red, slightly acid in reaction; it contains no albumin, sugar, casts, or blood; its specific gravity is 1025.

A von Pirquet test was negative.

Despite her denial of taking drugs other than those given to her by her physician,

which upon inquiry proved to be tonics, I firmly believed that her symptoms were induced by some hemolytic agent, probably a coal-tar derivative, and advised watching her closely. We were rewarded two weeks later by finding on her person the tablets which I have previously mentioned. An immediate examination of the urine for acetanilide gave, by the test of Müller, a well-marked indophenol reaction, which was positive for four days after the withdrawal of the drug. A specimen of urine was sent to Victor C. Myers, Professor of Physiological Chemistry at the Albany Medical College, to whom I am indebted for the following exhaustive report:—

Urine Examination.

A twenty-four-hour specimen was obtained on November 3, 1909, and after preliminary examination was preserved with toluene. Volume, 670 c.c. Color, a deep brown or brownish red (on further standing the urine became black). Odor, rather strong and somewhat peculiar. Sp. gr., 1026. Reaction, slightly acid. Urine slightly turbid, but no perceptible sediment. Microscopical examination, entirely negative.

Sugar.—The urine gave a strong reduction with both Benedict's and Fehling's solutions, and a slight reduction was obtained with Benedict's solution on adding only 1 drop of urine. When the phenylhydrazine reaction was applied to diluted urine, a bulky precipitate of phenyldextrosazone crystals settled out. These were easily identified microscopically. The urine showed almost no rotation.

Protein.—Heller's test with nitric acid was negative.

Indican.—A slight reaction was obtained with Obermayer's reagent and chloroform.

Acetanilide.—The urine was found to give a very strong indophenol reaction, but the alphanaphthol reaction for acetphenetidin was entirely negative. The indophenol reaction was, without doubt, referable to acetanilide. An attempt to isolate a crystalline body with ether and benzene was unsuccessful. To this end 300 c.c. of the urine were filtered, boiled with strong sulphuric acid, cooled, extracted several times with ether, the ether distilled off, the residue neutralized, and again extracted with ether. After distilling off the ether the second time, the residue was extracted with benzene and allowed to evaporate spontaneously, with negative result. The residue after the benzene extraction was still found, however, to contain a body capable of giving a strong indophenol reaction, though it seemed impossible to isolate this substance in crystalline form.

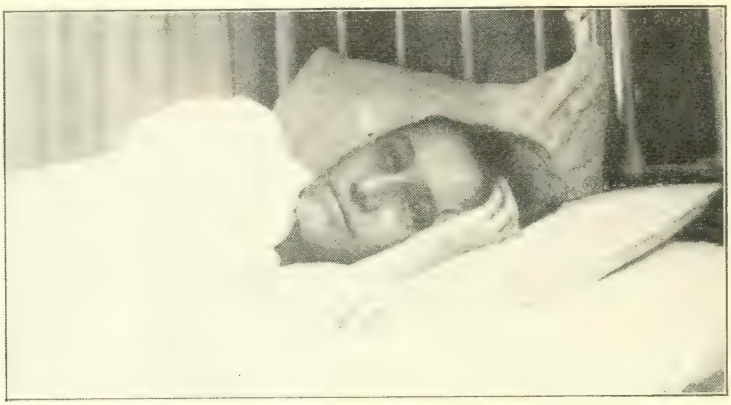
Sulphates.—The ethereal sulphates were very high, probably due to combination with some acetanilide derivative, such as acetylparaminophenol. The sulphate elimination in grams of H_2SO_4 per twenty-four hours was 0.046 Gm. for the inorganic sulphates and 0.719 Gm. for the ethereal sulphates, an inversion of the normal ratio. This amount of ethereal sulphate would be sufficient to combine with about 1.1 Gm. of acetylparaminophenol.

Glycuronic Acid.—It seemed of interest to learn whether or not acetanilide derivatives were eliminated in combination with glycuronic acid as a glycuronate. The reduction with Benedict's and Fehling's solutions might, in part, have been due to glycuronic acid, though dextrose was found to be present. The fact that there was almost no rotation in the presence of a considerable quantity of dextrose would point to the presence of some levorotatory substance such as a glycuronate. Tollen's phloroglucinol reaction was moderately strong, but a reaction with orcinol could not be obtained after boiling the urine with acid. It seems possible that glycuronic acid was present at least in small amount, though the evidence on this point was not conclusive.

Blood and Blood-pigments.—The guaiacum and benzidine blood-tests were entirely negative with carefully controlled solutions and reagents. No spectroscopic absorption bands could be obtained with the urine or slightly acidified urine. Heller's test was tried several times with uniformly negative results (boiling with caustic alkali). The phosphate precipitate was collected on one occasion and extracted with acid alcohol.

The alcohol assumed a dark color, but no absorption bands were noted. In the presence of blood, the absorption spectrum of hemochromogen should have been noted. A mixture of equal parts of a saturated barium hydroxide solution and 10 per cent. barium chloride was found to precipitate the pigment. The precipitate was then extracted with acid alcohol. The solution showed absorption spectra of none of the blood-pigments. Neither methemoglobin nor hematoporphyrin or other blood-pigments could have been present.

Dark Urinary Pigment.—The dark color of the urine was in all probability referable to urobilin (pathological urobilin of Jaffé). Twenty-five c.c. of urine were precipitated with 20 c.c. of equal parts of baryta water and barium chloride. After extracting the pigment with acid alcohol, the solution was observed spectroscopically. No absorption bands for hematoporphyrin were noted, and only very faint bands for urobilin. Chemical tests for urobilin, such as Jaffé's zinc chloride reaction in ammoniacal solution, were questionable. The pigment was found to be precipitated by both lead acetate and lead subacetate. It was also found to be salted out by ammonium sulphate to saturation in acid solution. This is the basis of G. Hoppe-Seyler's method for the



Case of chronic acetanilide poisoning, showing marked cyanosis and characteristic facial expression.

estimation of urobilin. Accordingly, 50 c.c. of urine were precipitated, washed with saturated ammonium sulphate, and extracted with equal parts of absolute alcohol and chloroform. This readily extracted the pigment. Upon purification an amount of urobilin equivalent to 0.2 Gm. for the twenty-four hours was obtained.

Summary.—In a specimen of urine obtained on November 3, 1909, the volume was 670 c.c., with a sp. gr. of 1026. The color was of a deep brown or brownish red when passed, but on long standing turned an ink-black. Acetanilide was easily demonstrated by the indophenol reaction, and acetphenetidin was shown to be absent. The urine gave a strong reduction with both Benedict's and Fehling's solutions, and upon applying the phenylhydrazine reaction an abundant precipitate of dextrosazone crystals was obtained. These were easily identified microscopically. It seemed probable that glycuronates were present, though the evidence on this point was not conclusive. The sulphate ratio was found to be reversed, being 16 to 1, only a comparatively few milligrams of the oxidized sulphur being eliminated in the form of inorganic sulphates. Blood-pigments were shown to be absent both chemically and spectroscopically. Special care was taken to detect both methemoglobin and hematoporphyrin, but they were absent. Chemically the pigment of the urine was identified as the pathological urobilin of Jaffé, which is occasionally found accompanying a destruction of the blood-corpuscles. A quantitative estimation of this urobilin was made by the method devised by G. Hoppe-Seyler and found to be 0.2 Gm.

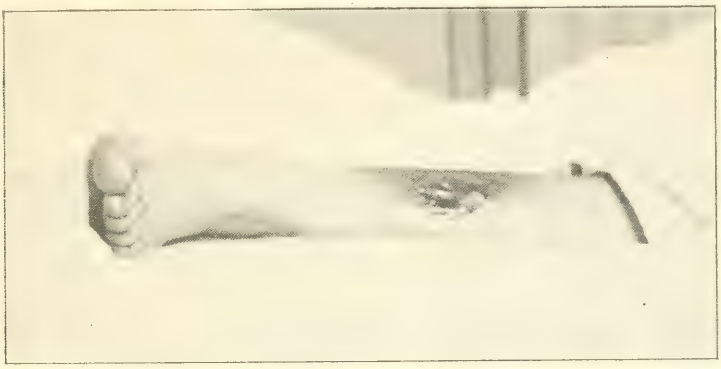
CASE II.—Mrs. A., married, aged 52 years, consulted me August 20, 1910, complaining of great exhaustion, considerable loss of flesh, shortness of breath on exertion, loss of appetite, and palpitation.

Family history unimportant.

History of Previous Condition.—Patient stated that her menstruation had always been regular until five years ago, when it ceased. At that time she developed very severe headaches, directly over the vertex, for the relief of which she obtained some "antipain" pills, using from 50 to 75 of these pills each week; this practice she has continued ever since.

At the present time she is weak and complains of pain in the region of the spleen, dyspnea, and palpitation of the heart.

General Condition.—She is slightly built; the muscles are flabby; there is some general emaciation; there is no edema, but there is marked cyanosis of the lips, ears, tongue, buccal and pharyngeal mucous membranes, fingers, and toes, and there is also considerable pallor. Her physician states that the cyanosis is variable; some days she is as blue as a huckleberry; at other times she is simply pale, with slight cyanosis of the lips and fingers. She is very restless at night, sleeps poorly, and is in an extremely nervous and irritable condition.



Case of chronic acetanilide poisoning, showing trophic ulcer on left leg.

Physical Examination.—Pupils are contracted; they react to light, accommodation, and consensually; the ocular movements are normal; the lids move normally; the hearing is acute in both ears; the facial muscles functionate normally; the senses of taste and smell are normal; motion and sensation are preserved.

The Reflexes.—The tendon reflexes are lively; the superficial reflexes are present, but not very active.

The Heart and Arteries.—The peripheral vessels do not appear thickened; the pulse is regular and easily compressible; the rate is 100 per minute; the systolic pressure is 115 mm. Hg. The apex beat is in the fifth interspace at the junction of the left mammillary line, at which point a soft systolic murmur is heard, transmitted to the left to the midaxillary line. The pulmonic second sound is accentuated. The aortic second sound is normal; there is no venous hum or visible jugular pulsation. The blood is bluish black in color. It was impossible to measure the hemoglobin accurately with the Sahli instrument, but it seemed to be 100 per cent. Microscopic examination of the blood showed a slight deformity of the red cells, no polychromatophilia, no nucleated red cells, and no granular stippling. There was no apparent leucocytosis. Unfortunately no blood-cell count was made.

The abdomen is tender and universally tympanitic; there are no enlarged glands or herniæ; in the left hypochondriac region and extending downward and inward almost to the umbilicus is a tumor mass having a distinct notch and an even, roundish border,

which moves on inspiration and corresponds to a dullness beginning in the midaxillary line at the seventh interspace and extending downward and inward. This is doubtless the spleen, and it is tender on palpation and percussion. The kidneys are not palpable. There is no abdominal ptosis. The liver dullness in the right mammillary line begins at the fifth rib and extends 1 cm. below the costal border. The lower margin of the liver feels normal, but the organ is decidedly tender.

The lungs show nothing abnormal. The urine is of a dark color; its specific gravity is 1010. It contains no albumin and does not reduce Fehling's solution; there is no occult blood present.

Urine Examination.—It was possible to obtain only a small specimen of urine in this case. The indophenol reaction was found to be strongly positive. Inasmuch as the alphanaphthol reaction for acetphenetidin was negative, the indophenol reaction was very evidently due to acetanilide. The urine was found to give a moderate reduction with Benedict's solution. Upon applying the phenylhydrazine reaction, dextrosazone crystals were obtained, which were easily identified microscopically. The rotation of the urine was found to be slightly levorotatory,—0.2 in a 10-cm. tube.

Subsequent History.—The patient was easily induced to give up the habit of taking the tablets (which proved to be acetanilide), and within three months she was restored to perfect health,—the spleen diminishing rapidly, the heart dullness decreasing to the normal, and the cyanosis being displaced by a normal pink coloration of the mucous membranes.

From this study the following conclusions may be drawn:—

First.—That the continuous ingestion of acetanilide or allied products creates a perfectly definite symptom-complex, characterized by cyanosis, enlargement of the heart, spleen, and liver, a definite blood-picture, and characteristic urinary findings.

Second.—That the acetanilide habit or addiction is a well-established one and its enslavement is comparable to that of opium or alcohol.

Third.—That acetanilide is a most virulent hemolytic poison which produces definite changes in the blood vascular system.

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DISCUSSION.

Dr. Brown: I am especially interested in acetanilide poisoning. You may remember a remarkable case which I reported in the American Journal of the Medical Sciences, fifteen years ago, of an individual taking 60 grains of acetanilide within two

hours. The patient died within six days, having had the symptoms which have been described so well in this paper, together with extreme nausea and the passing of claret-colored urine and reddish-black stools. Since that time attention has been called to the commonness of acetanilide poisoning, and I think the most important part of this paper, and of Dr. Wiley's work in Washington, has been to make known the dangers of the coal-tar products, and to bring before us the fact that we cannot afford to overlook them in cases of migraine and nervous headache. Persons acquire the habit with great ease. I have repeatedly come across this habit in people who will tell you nothing about their nervous symptoms and are very loath to tell you they are addicted to the use of such drugs. There is a craving for the temporary relief which some patients get from headache remedies containing acetanilide, of which they are ashamed, and which they regard as a habit which they know will be dealt with immediately if it comes to light. I have known a patient who got rid of a dollar bottle of such a remedy in a few days. She was addicted to the use of opium, which was first given to her by a physician, and then alcohol. Finally realizing that she was addicted to these habits, her physician succeeded in breaking them, but in doing so substituted the habit of taking one of these. It says on the bottle that there are 3 grains of acetanilide in each teaspoonful, and a patient usually takes a heaping teaspoonful, which amounts to 3 level ones at least, or about 10 grams a dose. If patients say they take 2, you may be pretty sure they take 5 or 6; so that the daily doses of acetanilide taken by these people are enormous. My fatal case took within a few minutes 60 grains and never recovered consciousness; he died within six days. The case showed that there was destruction of red corpuscles to about $\frac{1}{5}$ the normal. A large number of the red cells, however, were increased in diameter, and there were numerous nucleated red cells, many of them undergoing mitosis. In conjunction with the destruction of red corpuscles, there was an increase in size of some of the reds in proportion to the resistance. In this particular the resemblance to pernicious anemia is interesting. The nature of the pigment in the urine interested me greatly at the time. I recall one case, a man suffering from migraine, whose cyanosis was sufficient to lead me to believe that he was in danger. He would take 3 or 4 of the compound acetanilide tablets at one time. Why he did not kill himself, in view of the death-dealing dose of 60 grains of unadulterated acetanilide, I do not know. I presume that in time we get a certain resistance to these things. We must realize that this is one thing which people are loath to confess, and that they must be watched as morphine cases are watched. Stengel and White, of Philadelphia, reported the case of a physician's daughter who was in a Philadelphia hospital two or three weeks before they found a bottle of the tablets under her pillow, but not until she had been caught would she confess.

Dr. Stewart: Several points in Dr. Gordinier's paper might well serve as illustrations for my own paper at this meeting.

I had a classmate at the Philadelphia College of Pharmacy who was thrown out on examination. He, therefore, concluded that he would find an easier way of getting a living than by practising legitimate pharmacy; so he organized what he called a "chemical company" for the manufacture of acetanilide headache powders. A fanciful name was devised by his lawyer for this compound, and he placed it on the market. His next move was to create a demand by advertising the product in the medical journals. In this he was eminently successful. His sales were enormous. I remember seeing a large stock of this compound in the drug department of one of the principal San Francisco hospitals, where I was told that all the leading physicians in California were using it. The journal of the American Medical Association accepted the advertisements, and the profession generally employed it in their practice. Through physicians' prescriptions it was introduced to the lay public and then became a popular nostrum. My classmate's share of the profits was more than two million dollars. I am also acquainted with the history of another acetanilide compound headache remedy, introduced by a well-known manufacturing house, the sale of which has amounted to fifty thousand dollars

a year. This product was introduced directly to the laity by advertising in street cars, elevated railroad cars, etc. You will probably remember the case of the young Vassar girl, the daughter of a doctor who prescribed for her one of the acetanilide compounds without warning her against its abuse. She became addicted to the acetanilide habit, lost her reason, and finally walked into the lake and drowned herself. Much of what is evil in the nostrum business has been due to the abuse of the trade-mark system referred to in my paper. A fanciful name is given to an acetanilide compound, which conceals its identity, and it is introduced by advertising as a specific for headache. This evil has been in part corrected by the Pure Food and Drugs Act, which requires the amount of acetanilide present to be printed on the label. If physicians would confine their prescribing to legitimate pharmaceuticals, as prepared by decent manufacturing houses and supplied by pharmacists in the form of regular prescriptions, this exploitation of the public would be avoided.

Dr. Gordinier: I would like to ask Dr. Brown if he had an autopsy of his case. I can find no well-reported autopsy of cases of this kind, and it seems to me that a well-reported autopsy would throw a great deal of light on the subject.

Dr. Brown: There was an autopsy in that case, but it was not such a one as would probably satisfy your desire for knowledge. I did not know at the time, although we suspected the presence of a coal-tar product, exactly what was wrong with the patient. I think the records may, however, show something of what you want to know. I have not read the findings for many years. I want to mention a case of poisoning that was referred to me by a surgeon presenting extensive ulcers of the leg, upon which acetanilide had been used as a dusting powder —a danger not to be overlooked.

THE SYMPTOMS AND TREATMENT OF PNEUMOCOCCUS INFECTION IN PULMONARY TUBERCULOSIS.

By FRANK NEALL ROBINSON, M.D.,

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MONROVIA, CAL.

In a large percentage of tuberculous infections we hear reference made, sometimes in the taking of the history of these cases, to hemorrhage; but upon closer questioning, this assertion is usually modified to the expectoration of "bloody sputum" lasting over several hours or days, and in a large number of cases more marked in the morning. This expectoration of "bloody sputum" may be the supposed beginning of the tuberculosis, or manifest itself in the course of the disease, and is usually associated with alarm on the part of the patient.

In studying the sputum from a large number of these cases, microscopically and from cultures, I found that the infecting organism had all the staining qualities and cultural characteristics of Fränkel's diplococcus—the pneumococcus.

This was often the only organism, excepting the tubercle bacilli, present in the sputum, but in many cases there were associated also streptococci, or the *Micrococcus catarrhalis,* or both.

Ravenel and Klebs[1] found that the pneumococci in the mixed infection of tuberculosis were usually of high virulence. And why should they not be? Where is there a better medium than a tuberculous lung? The morbid process in every kind of a tuberculous formation is pneumonic, with a tendency to diffuse bronchopneumonic and lobular, sometimes pseudolobular and exceptionally lobar, inflammation, and it is well known that if hepatization takes place it is never gray, but red. If the tubercle bacilli alone can bring about this red hepatization, the pneumococcus is more likely to cause a rapid change of this character, and hence the expectoration of "bloody sputum."

Symptoms of Onset.

The beginning of this infection with pneumococci can be easily overlooked —and usually is if not watched for closely—until "bloody sputum" makes its appearance.

The early symptoms are those of mild infection, with a feeling of malaise, aching of the back and calves of the legs—just enough to attract the patient's attention—and an increase of cough and expectoration. The patient usually complains of "taking cold" or having the "grippe." These symptoms usually precede the bloody expectoration by from three to five days, but if the sputum be examined at this time a preponderance of pneumococci can be found.

Temperature.

If the infection takes place in a case which is usually running a temperature above 100° F., there is an abrupt rise of from one to two degrees accompanying the prodromal symptoms, together with a corresponding rise in pulse. With the onset of "bloody sputum" there occurs a slight drop in temperature, usually followed, in untreated cases, by a secondary rise, corresponding closely to the original one, and commencing about thirty-six to forty-eight hours after the cessation of the "bloody sputum." This secondary rise is undoubtedly due to absorption from the infected area.

If it is a case in which the maximum temperature is 99°, there may be no rise exceeding one degree, but the same train of symptoms follows the appearance of the "bloody sputum" as in those running a higher temperature.

Treatment.

My plan has been to commence immediately upon diagnosis, and after placing the patient in bed, the administration of large doses of creosote carbonate, 10 grains in capsules every three or four hours. We have here a new infection superimposed on the already tuberculous lung and must increase as

[1] Transactions of the Sixth International Congress on Tuberculosis, vol. i, part ii.

rapidly as possible the power to resist this invading organism; otherwise, we will have a second toxemia to deal with. Sajous[2] has clearly shown that "the efficiency of the blood's bacterial and antitoxic properties can be increased by the use of agents which enhance the functional activity of the adrenal system and simultaneously tend to inhibit the multiplication of bacteria in the lung," and further points to the physiological action of creosote carbonate in pneumonia as a primary disease, where, "by depressing the sympathetic, it causes the dilatation of the arterioles, thus enabling arterial blood to circulate with greater freedom through the diseased area, while by stimulating the test-organ it enhances the destruction of the pathological germs and their toxin."

Conclusions.

That carbonate of creosote will act as above I have proven many times to my satisfaction, for where I have used it in these secondary infections with pneumococci the temperature has fallen within forty-eight hours. If a case be diagnosed and the treatment instituted before "bloody sputum" is shown, this will not make its appearance. The aching pains leave, cough and expectoration are both diminished, the secondary rise in temperature is avoided, and all symptoms of the infection disappear.

If the treatment is instituted after "bloody sputum" has made its appearance, this, with the temperature, will disappear in forty-eight to seventy-two hours. It is well in these cases to continue the treatment for a week or ten days after all symptoms have ceased, watching the sputum for pneumococci until they are no longer found in large numbers.

THE CAUSATION OF PSYCHOPATHIC MALADIES.

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I.

The causation of all psychopathic diseases can be referred to one fundamental instinct, the instinct of fear, with its concomitant manifestation, the feeling of anxiety. Fear is one of the most primitive instincts of animal life. As Kipling puts it, "Fear walks up and down the jungle by day and by night." Our life is so well guarded by the protective agencies of civilization that we hardly realize the extent, depth, and overwhelming effect of the emotion of fear. Fear is rooted down deep in the very organization of animal existence; it takes its root in what is the very essence of life,—the instinct of self-preservation. *Primus in orbe Deus fecit timor.* "We lead," says Galton, "for the most part such an easy and carpeted existence, screened from the stern realities

[2] "Internal Secretions," vol. ii, p. 1672, 3d ed.

of life and death, that many of us are impelled to draw aside the curtain now and then and gaze for a while behind it."[1] "The progress from brute to man," says James, "is characterized by nothing so much as by the decrease in frequency of proper occasion for fear. In civilized life in particular it has at last become possible for large numbers of people to pass from the cradle to the grave without ever having had a pang of genuine fear. Many of us need an attack of mental disease to teach us the meaning of the word. Hence the possibility of so much blindly optimistic philosophy and religion. The atrocities of life become 'like a tale of little meaning though the words are strong'; we doubt if anything like us ever really was within the tiger's jaws, and conclude that the horrors we hear of are but a sort of painted tapestry for the chambers in which we lie so comfortably at peace with ourselves and the world. Be this as it may, fear is a genuine instinct and one of the earliest shown by the human child."[2]

Similarly, Sully says: "Fear appears early in the life of the child as it seems to appear low down in the zoölogical scale. Fear probably appears in the vague form (*i.e.*, without any distinct representation of a particular kind of evil) in connection with presentation, *e.g.*, of strange animals, which have contracted no associations from individual experiences and which derive their emotive force from special inherited associations. Experience is, however, the chief determining factor in the evocation of fear."[3] "Fear," says Darwin, "is the most depressing of all the emotions; and it soon induces utter, helpless prostration, as if in consequence of or in association with the most violent and prolonged attempts to escape from the danger, though no such attempts have actually been made."

The fear of coming evil, especially if it is unknown and mysterious, gives rise to the feeling of anxiety. "If we expect to suffer," says Darwin, "we are anxious." Similarly, James regards anxiety, especially the precordial anxiety, as morbid fear. "The anxious condition of mind," says Bain, "is a sort of diffused terror." Fear often expresses itself through cardiac and circulatory affections giving rise to the feeling of anxiety. Anxiety is nothing else but the working of the instinct of fear.

In most men the instinct of fear is controlled, moderated, regulated, and inhibited from very childhood by education and by the whole organization of civilized social life. There are, however, cases when the instinct of fear is not moderated by education and civilization, when the instinct of fear is aroused by some particular incidents or by particular objects and states. In such cases, if the instinct has not become controlled and inhibited, fear becomes associated with definite situations giving rise to morbid fear and anxiety and resulting in the mental diseases known as psychopathies, in general, and psychoneuroses, in particular.

In all such cases we can find the cultivation of the instinct of fear in early childhood. Superstitions, and especially the early cultivation of religion,

[1] "Inquiries into Human Faculty," p. 58.

[2] "Psychology," vol. ii, p. 115.

[3] "The Human Mind," vol. ii, p. 92.

with its fear of the Lord and of unknown mysterious agencies, are especially potent in the development of the instinct of fear. Even the early cultivation of morality and conscientiousness, with their fears of right and wrong, often causes psychoneurotic states in later life. What we find on examination of the psychogenesis of psychopathic cases, and especially of psychoneurotic cases, is the presence of the fear instinct which may become associated with some important interest of life. This interest may be physical in regard to the bodily functions, or the interest may be sexual, social; it may be one of ambition in life, or it may be of a general character referring to the loss of personality or even to the loss of mind. The fear instinct may become highly particularized and may become associated with indifferent objects, giving rise to the various phobias, such as astrophobia, agoraphobia, claustrophobia, erythrophobia, acmephobia, and an infinite number of other phobias, according to the number of objects with which the fear instinct becomes associated. Of course, objects and situations which are in themselves dangerous, or are apt to bring about pain and misery to the individual, such as strange animals, unfamiliar conditions, or diseases, *e.g.,* epidemics or any other physical and mental maladies, are apt to be associated with and arouse the fear instinct. This, however, is not always the case. Objects otherwise indifferent and even pleasant may by association arouse the fear instinct and give rise to morbid states.

James makes an attempt to enumerate the various objects of fear in men, and especially in children. Among these he regards "strange animals, strange men, strange places, such as the fear of the sea in children who have not seen the sea before. The great source of terror to infancy is solitude. Black things, and especially dark places; holes, caverns, etc., arouse a peculiarly gruesome fear. This fear, as well as that of solitude, of being 'lost,' are explained after a fashion by ancestral experience. High places cause a fear of a peculiarly sickening sort. Fear of the supernatural is one variety of fear. This horror is probably explicable as the result of a combination of simple horrors. To bring the ghostly terror to its maximum many usual elements of the dreadful must combine, such as loneliness, darkness, moving figures, inexplicable sounds, especially of a dismal character, moving figures half discerned, or if discerned, of dreadful aspect, and a vertiginous baffling of expectation. This last element, which is intellectual, is very important. It produces a strange emotional curdle in our blood to see a process with which we are familiar deliberately taking an unwonted course. Any one's heart would stop beating if he perceived his chair sliding unassisted across the floor. The lower animals appear to be sensitive to the mysteriously exceptional, as well as ourselves. My friend, W. K. Brooks, of the Johns Hopkins University, told me of his large and noble dog being frightened into a sort of epileptic fit by a thread which the dog did not see. Darwin and Romanes have given similar experiences. The idea of the supernatural involves that the usual should be set at naught. In the witch and hobgoblin, other supernatural elements, still of fear, are brought in—caverns, slime and ooze, vermin, corpses, and the like. A human corpse seems normally to produce an instinctive dread which is no

doubt somewhat due to its mysteriousness, and which familiarity rapidly dispels."[4]

The fear of the unknown, of the unfamiliar, of the mysterious, is quite common with children, with savages, and barbaric tribes. We know how in the case of the ancient nations omens, whether religious or meteorological, such as storms, thunders, lightnings, comets, and eclipses, were regarded with great terror. Armies used to throw away their arms and run panic-stricken at the occasion of the appearance of a comet or of an eclipse. Even in the civilized times of the Athenian republic there was a terror of eclipses and of other unfamiliar natural phenomena. Thucydides, in his history of the Peloponnesian wars, puts the appearance of comets among national disasters. The fear of coming unknown, unfamiliar evil is especially a source of anxiety to the young or untrained, uncultivated minds. This fear of some unknown evil befalling a person may become a source of great fear and anxiety when developed in early childhood. This fear of strangeness, of unfamiliarity, a feeling of being lost, developed in early childhood, may remain unassociated and thus give rise to a state of vague fear. Different forms of epilepsy are often associated with the fear instinct. The instinct, however, may through experience, through some trauma, find for itself an object and become associated with it, and thus give rise to the various forms of psychopathic diseases. "Anxiety, fear, horror," says Mosso, "will twine themselves perpetually around the memory, like deadly ivy choking the light of reason."[5]

The fear instinct is at the basis of all psychopathic diseases. All the symptoms in their infinite variety are so many different manifestations of the one fundamental fear instinct. The inner conflict and introspection characteristic of psychopathic troubles, and especially of psychoneurosis, are pathological solely because of their association with the fear instinct. Mental conflict and introspection never give rise to a mental malady. They are rather favorable to a speculative and philosophical mind. When, however, introspection and mental conflict are associated with the fear instinct, the result is a psychopathic malady. In the same way a physical sickness in itself, or the thought of suffering, physical or mental, does not give rise to a psychopathic affection. It is only when the sickness, or the thought of disease, becomes associated with the fear instinct, only then does a psychopathic malady arise. The sole source of psychopathic affections is the fear instinct, a development of which in early childhood predisposes to all forms of functional psychosis and neurosis.

II.

There is another factor which helps to arouse the fear instinct, and thus plays an important rôle in the causation of psychopathic maladies. This factor is *a narrow, suggestible personal life.* In my work, "The Psychology of Suggestion," I proved by a series of experiments that the conditions of suggestibility are: Fixation of attention, monotony, limitation of voluntary

[4] "Psychology," vol. ii, p. 418.

[5] "Fear," p. 226.

movements, limitation of the field of consciousness, inhibition. I have shown that these conditions are favorable to disaggregation of consciousness. I have pointed out that a disaggregation of consciousness with an inhibition of the controlling, waking consciousness is one of the important conditions in the causation of subconscious states with their accompanying abnormal suggestibility. In other words, the inhibition of the personal self, or even the limitation of the personal self, helps the formation of dissociations which constitute the soil of all psychopathic diseases. When the person, therefore, is limited in his interests, is narrow in his range of knowledge, is ignorant and superstitious, and his critical personal self is embryonic and undeveloped, the predisposition to mental disaggregation is pronounced. The fear instinct has full sway in the production of psychopathic states. With the limitation and inhibition of the critical personal self, with the limitation and narrowness of personal life interests, there goes an increase of the sense of the unknown and the mysterious, cultivated by religion and superstition, with the baneful consequence of the development of the fear instinct,—the cause of psychopathic affections.

In the embryonic personality of the child as well as in the undeveloped or narrowed individuality of the adult the sense of the strange, of the unknown and the mysterious, is especially apt to arouse the fear instinct. In fact, the unfamiliar arouses the fear instinct even in the more highly organized mind. "Any new uncertainty," says Bain, "is especially the cause of terror. We become habituated to a frequent danger, and realize the full force of apprehension only when the evil is previously unknown. Such are the terrors caused by epidemics, the apprehensions from an unexperienced illness, the feeling of a recruit under fire." "The mental system in infancy is highly susceptible, not merely to pain, but to shocks and surprises. Any great excitement has a perturbing effect allied to fear. After the child has contracted a familiarity with the persons and things around it, it manifests unequivocal fear on the occurrence of anything very strange. The grasp of an unknown person often gives a fright. This early experience very much resembles the manifestations habitual to the inferior animals." In another place Bain rightly says, "Our position in the world contains the sources of fear. The vast powers of nature dispose of our lives and happiness with irresistible might and awful aspect. Ages had elapsed ere the knowledge of law and uniformity prevailing among those powers was arrived at by the human intellect. The profound ignorance of the primitive man (and, we may add, of the undeveloped, limited, and superstitious adult) was the soil wherein his early conceptions and theories sprang up; and the fear inseparable from ignorance gave them their character. The essence of superstition is expressed by the definition of fear. An altogether exaggerated estimate of things, the ascription of evil agency to the most harmless objects, and false apprehensions everywhere, are among the attributes of the superstitious man."[6]

Compayre, in speaking of the fear of the child, says, "In his limited

[6] "Mental Science," p. 237.

experience of evil, by a natural generalization, he suspects danger everywhere like a sick person whose aching body dreads in advance every motion and every contact. He feels that there is a danger everywhere, behind the things that he cannot understand, because they do not fit in with his experience. The observations collected by Romanes in his interesting studies on the intelligence of animals throw much light on this question; they prove that dogs, for instance, do not fear this or that, except as they are ignorant of the cause. A dog was very much terrified one day when he heard a rumbling like thunder produced by throwing apples on the floor of the garret; he seemed to understand the cause of the noise as soon as he was taken to the garret, and became as quiet and happy as ever. Another dog had a habit of playing with dry bones. One day Romanes attached a fine thread which could hardly be seen, to one of the bones, and while the dog was playing with it, drew it slowly toward him: the dog recoiled in terror from the bone, which seemed to be moving of its own accord. So skittish horses show fright as long as the cause of the noise that frightens them remains unknown and invisible to them. It is the same with the child. When in the presence of all these things around him, of which he has no idea, these sounding objects, these forms, these movements, whose cause he does not divine, he is naturally a prey to vague fears. He is just what we should be if chance should cast us suddenly into an unexplored country before strange objects and strange beings—suspicious, always on the *qui vive*, disposed to see imaginary enemies behind every bush, fearing a new danger at every turn in the road."[7]

Similarly, Sully says, "The timidity of childhood is seen in the readiness with which experience invests objects and places with a fear-exciting aspect, in its tendency to look at all that is unknown as terrifying, and in the difficulty of the educator in controlling these tendencies." Sully is right in thinking that intellectual culture tends greatly to reduce the early intensity of fear. "This it does by substituting knowledge for ignorance, and so undermining that vague terror before the unknown to which the child and the superstitious savage are a prey, an effect aided by the growth of will power and the attitude of self-confidence which this brings with it."[8] An uncultivated personality with a limited mental horizon, with a narrow range of interests, a personality sensitive to the moral categorical imperative, a personality trained in the fear of the Lord and mysterious agencies, is a fit subject for obsessions.

In certain types of functional psychosis and neurosis the patient has an inkling of the fear instinct in his dread of objects, or of states of mind, moral scruples, lack of confidence, blushing, religious or social expectations of some coming misfortune and some mysterious evil, but he is not aware of the fear instinct as developed in him by the events and training of early childhood. *The fears of early childhood are subconscious.* At any rate, the patient does not connect them with his present mental affection. In other types of psychopathic affections the patient is entirely innocent of the whole situation: he is entirely

[7] Cf. Compayre, "The Intellectual and Moral Development of the Child," part i, p. 185.

[8] "The Human Mind," vol. ii, p. 93.

engrossed by the symptoms which he regards as the sum and substance of his trouble; the fear is entirely *subconscious.* The fear instinct fostered by frights, scares, dread of sickness, by religious instruction with its fear of the Lord, by moral and religious injunctions and duties with fear of punishment or failure in the moral standard and duties, the enforcement of social injunctions with the consequent dread of failure and degradation,—all go to the cultivation of the fear instinct which in later life becomes manifested as functional psychosis. *All functional psychosis is nothing else but an obsession of the fear instinct, conscious and subconscious.* Thus one of my patients became obsessed with fear of tuberculosis, manifesting most of the symptoms of "consumption" after a visit of a tuberculous friend. Another patient became possessed with the fear of death after visiting a sick relative of his in one of the city hospitals. Another became obsessed with the fear of syphilis after having been in contact with a friend who had been under antiluetic treatment. Still another of my patients, in addition to the fear of darkness, became obsessed with the fear of stars and also with fear of the comet, which was regarded by many people as poisoning the air with its highly noxious gases. In all such cases there was anxiety and dread of some symptom or state of an external object, but in none of the cases have I found that the patient had an insight into the real state of the mind; in all of them the fear was traced to early childhood, to early experiences of the fear instinct fostered and fortified by religion, morality, and social tradition. In all those fears lying on the surface of functional psychosis there was a long history of a well-developed subconscious fear instinct.

I may assert without hesitation that in all my cases of functional psychosis, and that without a single exception, I find the presence of the fear instinct to be the sole cause of the malady. Take away the fear and the psychosis or neurosis disappears.

The fear instinct arises from the impulse of self-preservation, without which animal life cannot exist. The fear instinct is one of the most primitive and most fundamental of all instincts. Neither hunger nor sex nor maternal instinct nor social instinct can compare with the potency of the fear instinct, rooted as it is in self-preservation,—the condition of life primordial. When the instinct of fear is at its height it sweeps before it all other instincts. Nothing can withstand a panic. Functional psychosis in its full development is essentially a panic—it is the emergence of the most powerful of all instincts, the fear instinct. Functional psychosis is a veiled form of the fear of death, of destruction, of loss of what is deemed as essential to life, of fear of some unknown impending evil. How many times has it fallen to my share to soothe and counteract the fear instinct of panic-stricken psychopathic patients? A psychogenetic examination of every case of functional psychosis brings one invariably to the fundamental fear instinct.

(To be concluded in the April issue.)

IMPERFECTIONS IN THE DIAGNOSIS AND TREATMENT OF PATHOLOGICAL CONDITIONS OF THE TEETH AND JAWS.*

By ROBERT H. IVY, M.D., D.D.S.,

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Until within comparatively recent times the oral cavity and its appendages,—the teeth, gums, and alveolar process,—with their diseases, did not receive the attention to which their importance entitled them in relation to pathological processes in the body at large. At present it is being slowly recognized that the mouth is an intrinsic part of the general economy. Much has been said recently by William Hunter and others on the part played by the mouth in the etiology of many constitutional diseases, the importance of oral cleanliness in the treatment of general infections, and the local manifestation within the mouth of disorders affecting chiefly other parts of the body. But these are only mentioned here to emphasize their importance.

What I desire particularly to speak of is our attitude toward dental and oral lesions, the causes of this attitude, and what can be done as a remedy.

The separation of the medical and dental professions has brought about a divergence in the teaching of pathology in the two schools. Dentistry, requiring as it does a large amount of skill and practice in purely mechanical operations, has been unable to devote sufficient time to the general study of pathology, and has evolved a pathology, and as its sequence a therapy, limited to its own particular field. Consequently pathology as applied to dentistry has come to be regarded as a more or less separate entity. The same general laws govern pathological processes in all parts of the body, and, while the use of the term "dental pathology" may be perfectly defensible, in the opinion of the writer it is best to avoid it, as it only has tended to isolate in the minds of the majority of members of the two professions lesions of the teeth and alveolar process from those of other parts of the body. The medical profession has accepted the special training of the dentist as sufficient to meet all cases involving the mouth, and has left this important portion of the body severely alone, treating it with more or less indifference, though all other specialties receive some consideration during the medical course. At the same time the physician reserves the right of final judgment of a particular case or criticism of the dentist's treatment. Medical men lay no claim to any knowledge of the teeth and their diseases, and the fault lies not so much with the individual as with the medical school, which has not a word to say during its course of instruction of the pathology of these important organs. Inasmuch as the mouth is a part of the human body, just in the same proportion should students of disease be taught the pathology and to a certain extent the diagnosis of its lesions. The special technique required in the treatment of diseases of the teeth may, of course, be left to the dental practitioner, just as that of

* Read at a meeting of the Philadelphia County Medical Society, October 25, 1911.

ophthalmic, rhinological, or gynecological therapeutics is left to specialists along those lines.

On the side of the dentist, the restriction of his education to the narrow field of the teeth and alveolar process and the long period requisite to the acquirement of necessary manipulative skill have minimized the importance of studying general pathological processes in relation to his specialty.

We can, therefore, say, in a general way, that the physician knows little of the lesions of the teeth, while the dentist is ignorant of general pathological processes. The disastrous effects of such lack of knowledge are frequently seen in cases in which a little broader education on the part of the dentist or less indifference to dental lesions by the physician would have given a true interpretation of the signs and symptoms presented and a rational basis for treatment.

How often during a physical examination, after glancing at the mouth, does the physician make a note of "extensive dental caries" when there is not a sign of a tooth cavity, the deposits of tartar being mistaken for decay of the enamel? Again, a deposit of tartar about the necks of the teeth is frequently put down as "pyorrhœa alveolaris." To have the latter, in the majority of cases, there must be a flow of pus, and, though pyorrhea is usually accompanied by tartar, the presence of one is by no means an assurance that the other exists also.

How much should the physician know of the lesions of the teeth? He should at least be able to say in the majority of cases whether the pulp of a tooth is exposed, alive, or dead, and on examination of a mouth have some idea of what can be done to improve it, to say whether this tooth must be extracted, or that one can be filled, or this other can have a crown placed upon it. The physician should also have a knowledge enabling him scientifically to relieve the sufferings of patients coming to him in cases of emergency with dental lesions. The doctor will frequently apply oil of cloves or other sedative in the attempt to soothe the "nerve" of a tooth already dead when the seat of the pain is not in the cavity of the tooth itself, but lies in the infected peridental membrane. The process of decay in a tooth, and its consequences, is divided into several stages, each of which presents definite symptoms and requires special treatment.

While disclaiming any knowledge of the teeth and their lesions, many physicians, particularly in surgical dispensaries, injudiciously extract teeth that could have been preserved, just because the patient requests extraction, and will often require no further evidence of the tooth at fault than the patient's indication of which he wants "pulled." Thus mistakes are frequently made, and sometimes the operator will remove one or two sound teeth before hitting upon the right one. The indiscriminate extraction of teeth is particularly injurious in children, in whom the lower first permanent molar is often the first to decay. It is allowed to do so by the child's parents under the impression that it is one of the temporary set, and will be replaced later by a permanent tooth. This tooth should never be extracted if it can possibly

be saved until the other teeth have erupted, as it is the keystone of the dental arch, and the positions of the other permanent teeth depend to a large extent upon it.

Many pathological conditions of the face and jaws come to the notice of physicians and surgeons that are dependent upon dental disorders, but the causes of which are not recognized by them. Suppurating sinuses opening upon the face or neck may be treated for months by curetting the underlying bone, applying silver nitrate, etc., when the simple extraction of an infected tooth or hidden root would cure the case in a few days. Many physicians will diagnose a case as trifacial neuralgia or tic douloureux on the symptoms alone, without searching by all the means available for an underlying local cause of the pain. In this way dental lesions, such as impacted teeth, pulp-stones, etc., are often overlooked. Nearly every case of trifacial neuralgia is in the first place due to local irritation, though in cases of long standing the pain may persist after removal of the original cause, and it is sometimes hard to discover a local cause. This should not deter us from using every available means of search, such as the X-ray and other methods, which often point to a local lesion the removal of which may save the patient from a ganglion operation. It may be laid down as axiomatic that an X-ray examination should be made in every case of pain about the face in which the cause is not immediately obvious.

In fractures of the jaws, the surgeon should be able to say what kind of appliance is suitable for a given case, instead of referring the patient to the dentist with the indefinite request that an interdental splint be made.

In contrast to the tendency on the part of some physicians to value lightly the preservation of the dental organs, the dentist too frequently attempts to preserve teeth that should be extracted. No attempt should be made to save teeth with abscesses discharging into the maxillary sinus or externally on the face or neck. In exceptional instances a healthy condition is regained without loss of these teeth, but in the great majority they must be sacrificed.

X-ray examinations show with astonishing frequency teeth bearing artificial crowns with abscess cavities at their roots,—results of prolonged attempts at preservation of teeth that should have been extracted long before. While it is possible to preserve and render useful many teeth that have caused alveolar abscesses, it is also true that too many of these teeth are retained, and remain as sources of irritation for years.

There is also a hesitancy on the part of dentists about extracting a badly decayed tooth that is causing an alveolar abscess. The patient is told to wait until the abscess subsides, as extraction might cause the inflammation to spread. The patient then consults the family physician, who refuses to interfere and sends him back to the dentist, and through these delays the abscess often does "spread," extending to the bone and setting up osteomyelitis and necrosis. In some cases, of course, the swelling is too great to insure the success of an attempt to extract the tooth; then the pus must first be allowed to escape by an incision in the gum over the swelling, and extraction deferred until the latter has subsided.

Another example of the imperfect understanding of pathology by the dentist is the injection of local anesthetics into the inflamed areas about teeth prior to extraction. This mechanically forces bacteria and their products into surrounding healthy tissues, frequently causing osteomyelitis and necrosis, to say nothing of the toxic local and general actions of the drug itself. No matter how carefully the operator may sterilize his needle, spread of the infection already present will occur in many cases. As to general anesthetics, while nitrous oxide gas may be administered with impunity by the dentist, who has little or no knowledge of physical diagnosis, the same cannot be said of ethyl chloride and its combinations under various proprietary names such as somnoform, etc., which are given indiscriminately every day in the offices of hundreds of dentists. The lack of knowledge of physical diagnosis on the part of the dentist, causing him to overlook cardiac and other lesions, also renders the local use of cocaine dangerous in his hands.

This brief presentation, it is hoped, will make clear the advantages of a better understanding by physicians of the lesions of the teeth, and a more thorough training on the part of dentists in general pathology and physical diagnosis.

These conditions would be brought about for the physician by a short course in our medical schools on pathological processes of the teeth and jaws, with their diagnosis and treatment. Such a course would include a study of the pathology, symptoms, and emergency treatment of dental caries, pulpitis, pericementitis, and alveolar abscess; the recognition of various other lesions of the teeth, different forms of stomatitis, impacted teeth; diagnosis of oral conditions responsible for trifacial neuralgia and other local and general disturbances; the special treatment of fractures of the jaws and their complications, and many other conditions that at the present time do not receive sufficient attention in medical schools.

The ideal education for the dentist would be the complete medical course leading to the degree of Doctor of Medicine, followed afterward by the special training required in dental operations. This plan would make of dentistry a true specialty of medicine on a par with laryngology, gynecology, and the other specialties, instead of being as it is now an almost independent profession. This is rendered impracticable as a regular plan by the large amount of training necessary to the efficient performance of this reparative work. But we are told that dentistry stands for more than this, and takes upon its shoulders the treatment of affections of the vital processes in the teeth and jaws. Such being the case, and circumstances making it necessary for dentistry to be regarded as a separate profession, the most practical way of meeting the difficulty is to educate the dentist more broadly in the principles of pathology, medicine, and surgery. The student, in addition to the adequate courses in chemistry, anatomy, physiology, and bacteriology that are already required, should have instruction in general pathology and in physical diagnosis, with a few hours in clinical medicine and more particularly surgery. Practical work in a general surgical dispensary would be of the greatest assistance to

him and would broaden his view in the diagnosis and treatment of diseases of the teeth and jaws. The great drawback to this plan is that it would permit of less time for practice in the mechanical side of dentistry. This is illustrated in England and on the continent of Europe, where students are educated more along general medical and surgical lines, and where manipulative skill is consequently not as great, as a general thing, as it is among dentists with an American education.

Finally, the treatment of hospital patients suffering from various pathological conditions of the jaws would be greatly improved by having in all large hospitals graduate dentists as internes. This has been done at the Philadelphia General Hospital for the past eleven years. The dental internes not only have the care of injuries and diseases of the jaws, but also look after the oral hygiene of all cases in the hospital. This co-operation of physician and dentist is of inestimable value to the patient and to the hospital, and is mutually beneficial in the education of the internes themselves.

Cyclopedia of Current Literature

ADIPOSIS PITUITARY SYNDROME OF LAUNOIS.

The authors make a preliminary report on a case of this kind which showed narcoleptic fits, but was without genitourinary symptoms. The patient, a salesgirl of 25 years, after suffering for a year with vague malaise and headache, had in four months increased in weight from 141 to 184 pounds. She consulted an orthopedist, believing she had sciatica because of pain in her back and dragging weight and tenderness of her legs. Dull headaches interfered with her pleasure and interest in life. There was marked loss of memory. Now and then, indeed, she would fall suddenly fast asleep, even falling over. Sometimes in these attacks she spoke absurdly or sang. It was this behavior which led to the consultation with the authors. Vomiting was rare and there was no true vertigo. Now and then the vision dimmed suddenly, and the lines she read would blur. The headache was said to be deep and low in the middle of the head, and felt sometimes like a bursting. On examination the organs were found intact; there was great hypertrophy of the body fat, which was tender on pressure, but not of the bones or mucous tissues. The increase of size was asymmetrical, but without preponderance on either side. The veins of the thighs were congested; so was the conjunctiva. The X-rays showed a deepening of the sella turcica.

The authors diagnosed a neoplasm in or around the pituitary body, because of the deep headaches, the heaviness and sleepiness, the hypertrophy of the fatty tissues, and the changes in the visual field. The treatment followed was that of Béclère and Jaugeas, consisting of exposure of the pituitary region for about ten minutes every week to Röntgen rays from four different points of the temporal region. The narcolepsy at once ceased, the headaches were diminished, the reflexes became less active, and the visual field improved. In spite of some interruption in the treatment, the patient

was well some six months later, though the body weight had not diminished with a restricted diet. The authors now intend to administer thyroid gland in the hope of increasing metabolism. Tom A. Williams and J. Dunlop (Journal of the American Medical Association, January 13, 1912).

CALCAREOUS DEPOSITS IN ARTERIES AND GLANDS.

The authors carried out an extensive chemical research on this subject, using fresh specimens obtained from the post-mortem room. They found that calcareous degenerations in the aorta and in caseating glands show differing compositions varying with the stage of the process. In the earliest stages there is a large amount of free fat. As the degeneration progresses there is a formation of calcium soaps. The latter gradually break down, the calcium ion combining, instead, with phosphoric acid and carbonic acid radicles to form insoluble deposits of calcium phosphate and carbonate. The small amount of organic matter in the diseased portion is possibly of the nature of purin bases. There is some evidence to show that these changes are the results of deficient oxygenation at the part. Benjamin Moore, G. W. N. Joseph, and O. T. Williams (Liverpool Medico-Chirurgical Journal, January, 1912).

COXA VARA.

The etiology of this affection is discussed by the author. He defines it as a condition of bone softening occurring in rapidly growing children, usually at about puberty, which generally is only marked enough to show in the femoral necks, but which when the process goes a step farther may involve other parts of the bony skeleton. The term coxa vara is bad, because it leaves one at a loss as to the underlying pathology. Something closely allied to infantile rickets in all probability is the cause of this deformity,—something which is an intermediate step between rickets and osteomalacia; a sort of abortive osteomalacia. That it is fundamentally a metabolic disturbance is shown by the fact that these children are generally abnormally stout or have grown abnormally fast, and when the balance is restored they recover from those symptoms to which the condition gives rise. Fracture of the femoral neck and epiphyseal separation may occur in children suffering from this disturbance without a traumatic cause of sufficient severity to seem to justify the lesion. It is well, therefore, to bear in mind that there is a constitutional disturbance which may cause local joint symptoms of this sort, and that this disease touches infantile rickets, on the one side, and adult osteomalacia, on the other. The prognosis is generally very good. The author has seen only 3 cases in which the condition became one of osteomalacia, 2 of these being in young boys. C. F. Painter (Long Island Medical Journal, November, 1911).

DIPHTHERIA CARRIERS, STAPHYLOCOCCUS CULTURES IN THE TREATMENT OF.

Schiotz, of Copenhagen, was much impressed with the fact that a patient with staphylococcus sore throat, installed in a diphtheria ward by error, did not contract diphtheria, and also with the fact that intercurrent attacks of staphylococcus sore throat in several cases terminated positive Klebs-Löffler findings in convalescents from diphtheria. Acting on the presumption that the staphylococcus was the cause of immunity, on

the one hand, and of cure, on the other, he inoculated six carriers with staphylococci with complete success in each instance. The author reports a case in which these observations were confirmed. A child had an attack of diphtheria from which he got apparently well under antitoxin, but the throat cultures, over three weeks after the start of the disease, showed abundant diphtheria bacilli. A tube of 8 c.c. of bouillon was inoculated with a single loop of a freshly made agar growth of *Staphylococcus pyogenes aureus* and painted over the child's throat four times during the day. Cultures taken next morning showed very few diphtheria bacilli and but few staphylococci. After another treatment on the third day, the throat gave a negative culture. Subsequently diphtheria bacilli reappeared, but a more thorough and widespread application of the staphylococcus caused them to disappear permanently. The throat had a more healthy appearance, and the child's general condition improved markedly. The staphylococcus culture at no time caused any symptoms. The author believes that at first the treatment was not energetic enough; otherwise, the quarantine would have been much shortened. The harmlessness of the procedure was well illustrated; also the fact that partial failure may be expected if the staphylococcus is used with too much timidity. Henry Page (New York Medical Journal, December 23, 1911).

ECZEMA IN NURSLINGS, TREATMENT OF.

The author used applications of heated air in 35 cases of eczema in infants, with good results. Most of the cases had already been treated with ointments and zinc oxide pastes without success. Under the hot-air treatment the little patients gained in weight, the itching diminished, and the lesions disappeared in a relatively short time. The treatment was applied for five to ten minutes, once daily, and in the intervals the affected region was covered with olive oil. Strict dietetic measures should be enforced during the treatment. J. Perlmann (Münchener medizinische Wochenschrift, January 9, 1912).

GANGRENE, SODIUM PERBORATE AS A DRESSING IN DIABETIC.

The author frequently uses sodium perborate as a dressing in infected wounds and acute and chronic ulcers. He has also employed it with success to arrest hemorrhage in epistaxis or after adenoid operations and tonsillotomies. He now reports 3 cases of diabetic gangrenous ulcers in which the drug, applied as a powder, rapidly brought about healing,—in one instance after other local medication had failed. The powder was usually applied twice daily. A. Herzfeld (Journal of the American Medical Association, November 11, 1911).

HEART MURMURS, TIMING OF.

Comparison of the time of a heart murmur with the pulsations felt in the radial or carotid is generally sufficient to show whether the murmur is systolic or diastolic, but when the rate is rapid or the murmur unusual there is uncertainty. The author describes an improved procedure which has given him satisfaction in these cases. It consists simply in making intermittent pressure upon the radial artery to correspond in time with the murmur. If this intermittent pressure occurs with the systoles the finger feels the pulsation of the artery each time, but if with the diastoles it feels no pulsation whatever. With this method, therefore, if the finger pressing with the murmur feels the radial

pulsations the murmur must be systolic, while if the finger feels no pulsation it must be diastolic. Familiarity with the procedure is easily acquired by timing the normal heart sounds in the same way. Great irregularity of the heart may defeat any attempt at timing murmurs accurately, but slight irregularity will leave sufficient regular cycles to apply this method. Eli H. Long (Buffalo Medical Journal, February, 1912).

HEMOPHILIC BLEEDING CHECKED BY FOREIGN BLOOD.

The author reports the case of a boy aged 13 who gave a history of several hemorrhages treated by physicians and dentists, with no complete control of hemorrhage in less than fifteen days. The boy had been struck above the right eyebrow by a pump-handle. The extravasated blood gravitated to the upper eyelid and formed a tumescence projecting an inch from the forehead. This burst at school and the author was called twenty-four hours later. He found projecting from the eyebrow a hollow cone formed of blood, which had slowly coagulated, from the end of which blood was dropping at the rate of one drop per second. The author removed the cone, cleansed the parts, and found an opening in the skin, ⅜ inch long, from which the blood ran freely. He applied in succession hot compresses, ice, epinephrin, iron, caustics, and collodion dressings following pressure, none of which had any effect for more than five minutes. He then cleansed the wound thoroughly, had a hot compress applied with considerable pressure, made an incision in the third finger of his left hand, under sterile conditions, and, removing the compress, allowed his blood to drop on the wound. A clot formed immediately and not one drop of blood again escaped. J. H. Sayer (Journal of the American Medical Association, January 13, 1912).

HEMORRHOIDS, TREATMENT OF.

The author describes his experiences with the injection method, which he has used in 55 cases, and states that, while this procedure is not applicable to all cases of hemorrhoids, it is superior to any other in simplicity, results obtained, comparative absence of pain, and freedom of exercise allowed the patient immediately after operation.

The patients, after suitable preliminary preparation, are placed preferably upon the left side, with knees well flexed. If the tumor presents, a compress soaked in 2 per cent. phenol is applied to it and allowed to remain for two or three minutes. If the tumor is not in sight, and the patient cannot force it down, a rectal speculum should be introduced to bring it into view. In but few cases is it necessary to establish cocaine anesthesia. The solution used by the author for injection consists of equal parts of phenol, glycerin, and sterile water, and, of this, 2 to 4 minims (0.12 to 0.25 c.c.) are injected into the pile, according to its size. An ordinary hypodermic needle usually suffices, though a longer needle may be required to reach a tumor located high up. After the injection the tumor should be forced back above the sphincter muscle. The patient should rest in the reclining position for the next six hours and abstain from straining and other physical exercise; otherwise, prolapse of an injected pile may occur and strangulation result. In this event the pile should be returned to its proper position as promptly as possible and compresses of lint steeped in hot water frequently applied.

The pain following the injection is slight and momentary, the acid used

being itself a local anesthetic. Occasionally burning may be set up during the first succeeding night. This is rarely sufficient to warrant an anodyne; yet, it is well to provide against it by prescribing a few 2½-grain (0.15 Gm.) tablets of Dover powder and directing one to be taken every half-hour should such smarting become distressing. Exceptionally a hemorrhoidal tumor may become inflamed after its injection, protruding from the bowel, and be very annoying for five or six days. This occurred in 3 of the author's 55 cases.

The result of the injection treatment is a rapid shriveling of the pile tumor, either without a break in its mucous covering or with slight ulceration. After the disappearance of the tumor there often remains a small ulcer at the base of the original pile formation. This is of but little consequence, but no case should be finally discharged while any such ulceration remains. Its cure is soon accomplished by applying a solution of silver nitrate (10 or 15 grains to the ounce) to the raw surface. This should be done every two or three days. At the same time the bowels should be kept open by occasional saline cathartics, and the lower bowel flushed daily with an enema.

Recurrences are not apt to take place after the injection method, since the pile cavity from base to summit is completely obliterated by the phenol, but it does not follow that in course of time another hemorrhoid may not appear. This occurred in 2 of the author's cases, but the subsequent pile tumor was insignificant and differently located. Such a return may take place after any other save the Whitehead operation. C. H. Wilkinson (Texas Medical Journal, January, 1912).

INGUINAL HERNIA IN CHILDHOOD, MANAGEMENT OF.

In infants it is possible to obtain a cure, the author remarks, by maintaining continuous reduction by means of a truss, but after the second year the chances of cure by this method are doubtful. Surgical treatment, however, is then eminently satisfactory. The rule, therefore, should be fairly uniform: (*a*) in infants apply truss continuously as soon as the hernia is diagnosed; (*b*) after the second year consider radical operation if the nutritional index is favorable.

Treatment with the truss can be efficient only when the underlying principles are understood and its application is in the hands of a vigilant and careful nurse. The measuring, ordering, fitting, and hygiene should by all means be supervised by the physician himself. From the time the truss is applied there must not be a moment when the hernial opening is without support. The nurse should receive specific instructions in reference to the purpose of the truss, the location of the hernial opening, the proper placing of the pad, etc. The hygiene of the truss is an important consideration, the problem being to prevent excoriations of the skin, which is constantly subjected to pressure and soiled with urine. The best results are obtained by having two trusses. The truss is kept on while the child is being bathed; when it is removed for cleansing the underlying skin, the nurse is instructed to maintain pressure with the fingers over the hernial opening. The skin is then cleansed and sponged with alcohol and witchhazel, dusted with talcum powder, and the clean and dry truss adjusted in place. Should skin excoriation occur, zinc oxide ointment may be applied. After the truss is pre-

scribed, fitted and shaped, and full directions given for the after-care, the physician's supervision is still essential. The child is developing, and the truss must be changed and adjusted to meet the demands of growth.

After the age of 2 years, if the hernia still persists, the truss should be abandoned and a radical cure performed because: 1. The chances of cure steadily diminish up to the age of puberty. 2. Truss pressure causes atrophy of the underlying muscles, thereby diminishing the protection afforded by them and lessening the chances of radical cure. 3. The wearing of a truss interferes with proper exercise and, therefore, with bodily development. 4. The cures by truss are often apparent, not permanent. 5. Operation removes all disagreeable sequelæ by establishing normal conditions. With the age limitation mentioned, it is the author's experience that the younger the child the more satisfactory the results of operation. W. F. Campbell (Medical Record, January 20, 1912).

INTERTRIGO, TREATMENT OF.

This condition in young children being frequently due to the presence of irritating discharges, the first necessary measure in the treatment is to remove the cause of the discharges. Thus, in an infant suffering from diarrhea due to acute enterocolitis, the dietetic management is of the utmost importance. The milk should be stopped for several days and rice-water, or arrowroot, or albumin water substituted until the acute process subsides. Plenty of water should be allowed in order to allay thirst and favor elimination.

Internal medication should begin with 5 to 10 grains (0.3 to 0.6 Gm.) of sodium phosphate, given every morning for two or three days to remove irritants from the stomach and bowels. This is usually followed up with a teaspoonful (4.0 c.c.) of castor oil, which effectually checks the diarrhea.

As to local treatment, the author advises that the parts be thoroughly soaked with a bland solution such as oatmeal water. An oatmeal bath, carried out by filling a cheesecloth bag with several pounds of oatmeal, soaking this in a tub of boiling hot water about one-half hour, after which, when the water has cooled to about 100° F., the child is given a hip bath for fifteen minutes, exerts a very soothing effect on the inflamed skin. The following salve is then to be used: Calamine and zinc oxide, of each, 3 parts; petrolatum, 50 parts. After the application of this the inflamed parts are dusted with cornstarch or wheat flour. No more bathing should be allowed, but the salve should be reapplied three times daily. If the parts are soiled by a fecal movement, they may be cleansed with cotton dipped into olive oil, after which the salve should be again applied. The prognosis in these cases, if the above treatment be instituted, is very good. L. Fischer (Medical Era, October, 1911).

INTESTINAL STASIS, HORMONAL IN.

This preparation is an extract of the spleen supposed to contain a hormone that stimulates intestinal peristalsis. It has been claimed to re-establish a normal peristaltic rhythm even after several years of constipation. It is given either intravenously or intramuscularly in doses of 20 c.c. The author reports the results obtained with it in 5 cases, one of spastic constipation, with general nervousness, and four others of the atonic type. In spite of Zuelzer's statement that hormonal is effective in

spastic constipation, the author found it of no appreciable value in this condition. In that form of flaccid constipation in which the cerebrospinal centers are affected the preparation also seemed useless in the author's hands. On the other hand, it appeared to be effective in flaccidity due to inhibition of the sympathetic centers (postoperative paresis) and in constipation due to a general peripheral atony. The author considers it worthy of note that the intramuscular injections given in 2 cases were without result, whereas of the three intravenous injections given in the other cases two were productive of benefit. G. H. Hoxie (Interstate Medical Journal, February, 1912).

IODINE TINCTURE, USE OF, IN VARIOUS INFECTIONS IN CHILDREN.

The author reports results obtained with local applications of tincture of iodine in 660 children suffering from various inflammatory affections of the throat, mouth, nose, ear, etc., as follows: tonsillitis, 400 cases; chronic and subacute otitis media, 32; otalgia, 2; pharyngitis, 42; tonsillar diphtheria, 44; nasal diphtheria, 8; nasal and tonsillar diphtheria, 1; stomatitis, 65; thrush, 5; laryngeal croup, 9; laryngitis, 28; scarlet fever, 9; measles, 7; nasal discharge, 6; multiple furunculosis, 2. In many of the throat cases cultures were taken just before and forty-eight hours after the application of iodine. In every case the second culture showed a very small growth of attenuated bacteria or no growth at all, while a profuse growth was obtained from the first culture. Cases of severe sore throat cleared up and healed in two or three days that might have required a week for cure by other methods. The other classes of patients were also much benefited. Although pronounced burning or pain in the throat is produced by the iodine, it does not last long and the good results justify the use of the remedy. Where a milder application than the tincture is desired for the throat, especially deep down in it, and in the nose, equal parts of glycerin and iodine tincture are satisfactory. The author has used this combination in the treatment of babies only 1 year old with good results. He lays stress on the prophylactic value of applications of tincture of iodine to the throat in the acute contagious diseases, early in the attack and during the active stage of the affection, this measure preventing very materially the spread of the contagion to other members of the family or outsiders. H. M. Sill (New York Medical Journal, December 9, 1911).

KNEE-JOINT, TREATMENT OF DISLOCATION OF INTERNAL SEMILUNAR CARTILAGE OF.

This condition occurs most commonly when an individual, while standing solidly on one foot, *e.g.*, on a stepladder or chair, makes a quick move or executes inward rotation at the knee. The internal condyle of the femur, pressing against the cartilage, displaces it inward, rupturing the coronary ligaments.

In treating this accident, the author fits a piece of sole leather about 4 inches long and 1¾ inches wide to the inner side of the knee. By first soaking the leather in water and whittling the edges so that it is smooth, it may be molded into shape. It is fastened over the cartilage by adhesive straps—two up and down, one horizontally and one oblique—and covered with a fairly firm bandage. The patients may walk as usual, though for the first three or four days they complain of some local soreness. The bandage is renewed every ten days. After

about three such treatments, the patients are well and only a bandage need be used. The irritation of the leather probably causes an aseptic adhesive inflammation to be set up between the loosened cartilage and bone, this taking the place of the ruptured coronary ligaments. G. Chandler (Journal of the American Medical Association, October 28, 1911).

MEAT INDIGESTION AND INDICANURIA IN CHILDREN.

Upon studying the relationship existing between meat indigestion and indicanuria in a series of children, the author found that, with an ordinary diet containing meat once daily, children 6, 9, and 12 years old succeed in digesting their food fairly well without much putrefaction in the intestinal tract. Three-year-old children with the same diet, on the other hand, are much more apt to show indicanuria. The giving of meat twice daily produces in 9- and 12-year-old children practically no change in the amount of intestinal putrefaction. In 6- and even more markedly in 3- year-old children meat given twice daily gives rise to decided increase in the indicanuria and is a cause of pronounced intestinal putrefaction. The giving of meat more than once daily to children under 9 years of age is to be deprecated on account of the harm resulting to the organism from the constant presence of abnormal products of putrefaction. Some parents are found, on the other hand, laboring under the delusion that meat soups contain all the valuable constituents of the food, and giving to the child no meat at all. Such a practice, the author believes, may also be productive of harm. E. C. Fleischner (American Journal of Diseases of Children, October, 1911).

MELÆNA NEONATORUM.

Laying stress on the fact that in a large proportion of cases the children who subsequently develop melena are particularly healthy at birth, and that it is hardly to be imagined that a baby with a congenital blood disease of whatever nature could develop *in utero* to perfect maturity and yet within a few days develop a disease progressing rapidly to a fatal issue, the author states his opinion that the blood changes in melena are the results of a primary sepsis, in many instances at least. For various reasons, which he enumerates, he does not believe that the avenue of infection is the stump of the cord, as some have thought, but the gastrointestinal tract, especially the mouth. He no longer permits the so-called mouth-cleansing after birth, as far more chance is given for the introduction of organisms by this attempt than for their removal, even if they are there to be removed. Such oral infection may conceivably occur in the maternal birth canal; the head often remains stationary in the lower vagina for some time, and in some cases, through interference with the placental circulation, the infant attempts to inspire while the head is still in the vagina. In view of these facts prophylaxis of many of these cases would seem to be impossible except in so far as prompt delivery may serve.

In general, the prognosis in melena has been considered practically hopeless. In about a dozen cases of the author, there was no benefit from any form of treatment except in the last, in which recovery was undoubtedly due to the administration of injections of human blood serum. In this case bleeding began at the root of the cord and was checked, in this situation, by passing a ligature through the cord just within the abdominal wall. Later there appeared

vaginal and rectal bleeding, traces of blood in the vomitus, and a hematoma under the neck muscles. Emaciation progressed rapidly, and the condition seemed hopeless. In the emergency the father was used as the donor for the first injection of serum. Twenty c.c. was injected into the tissues of the back. Further injections of 18, 10, 6, 18, 14, and 6 c.c. were given on the four succeeding days, with complete recovery as the result.

The method used in securing the serum was merely to incise the skin after careful cleansing, perform an ordinary bloodletting, and, collecting the blood by gravity, allow the serum to separate spontaneously from the clot. Small ¼-liter flasks were found to yield the largest amount of serum. With an antitoxin syringe the injections were made in the child's back at a point anywhere from its scapulæ to its buttocks. The procedure has distinct advantages over actual blood transfusion in that no special skill is required, and that more persons are willing to submit to a mere bloodletting than to a transfusion. W. R. Nicholson (Therapeutic Gazette, February, 1912).

NASAL ACCESSORY SINUSES, TREATMENT OF ACUTE AND SUBACUTE INFLAMMATION OF.

Although there are certainly many cases of this kind which upon the first examination present symptoms demanding surgical means for their relief, the author holds that cases of sinus inflammation should be more carefully treated medically than is now the custom, and the integrity of the nasal mucous membrane with its underlying bony structure preserved in so far as the condition present admits.

In the general treatment, rest in a position favorable to drainage of the cavity, provided the ostium can be gotten open, is most essential. A mercurial followed by a saline should preface the treatment, and the diet should be liquid. Administration of acetyl-salicylic acid proved helpful in many of the author's cases, and hexamethylenamine seemed on one or two occasions to reduce suppuration and hasten recovery. Diaphoresis with hot lemonade is recommended after the calomel and saline. Atropine and belladonna are sometimes valuable, but should be resorted to with great care because of the drying effect on the secretion.

Locally, the application by means of cotton swabs of a 2 per cent. cocaine solution, followed by epinephrin, is best at first. This should be followed by the use of antipyrin in 4 per cent. solution to prolong the ischemia. Cocaine should not be placed in the hands of the patient; where the surgeon cannot make the application, the drug should be used in a spray by the nurse or one of the family rather than the patient. A spray of some suprarenal preparation in an alkaline medium may be safely used every two or three hours.

After thorough contraction of the nasal mucous membrane, the swab should be used to clear the opening of the sinus or sinuses involved, and the nose irrigated with warm normal saline solution containing a little sodium bicarbonate, taking great care not to force any fluid into the Eustachian tube. After this, a spray of menthol and camphor in an oily medium is of benefit. Mild suction by means of an exhaust bulb or the Brawley apparatus proved beneficial in emptying the sinuses and inducing a favorable local hyperemia. The use of the leucodescent lamp over the sinus was found to give comfort. Hot applications

favored reduction of inflammation and hastened resolution, but cold or ice-bags in this region the author considers contraindicated.

Irrigation of the sinuses is a difficult procedure, and in many cases quite impossible without removal of some portion of the middle turbinate bone. To make sure that the tip of the cannula has entered the cavity, an X-ray plate should be made with it *in situ*. After the irrigation, either with normal saline or some mild alkaline solution, air should be blown into the cavity to dry it and free it from the irrigating fluid. Should such treatment not relieve the condition within a few days, surgery must be resorted to.

In subacute inflammations the treatment is much the same, except that in this class of cases the use of autovaccines is of the highest importance. Vaccine therapy is also useful in hastening recovery of acute cases, though the length of time necessary to prepare the vaccines (four days) makes it of little value at the time of greatest intensity of the symptoms. Where improvement does not follow the first injection of vaccine, repeated cultures should be made in the hope of finding the organism truly responsible for the condition. Injections are to be given every five days, though the interval may have to be prolonged a day in order to inject on the rise of the opsonic index. C. M. Miller (Old Dominion Journal of Medicine and Surgery, November, 1911).

NEUROSES, TREATMENT OF GASTRIC.

In the author's opinion the gastric neuroses depend not wholly upon one, but on three factors, which may be placed thus in the order of their importance and are usually seen in combination: 1. Asthenia universalis congenita; by far the most frequent primary cause. 2. Chronic starvation; almost invariably associated with the asthenic cases, but adequate as a primary cause. 3. Pure psychoneurosis; a relatively rare factor.

Treatment of the more common types should properly commence in childhood, but under proper conditions even the severest types in the adult may be entirely relieved. The treatment must be based on the fundamental proposition that the patient is suffering from impaired nutrition affecting practically every organ and function in the body and from mechanical displacements of the abdominal viscera, which under such conditions assume a serious aspect, though usually symptomless when the nutrition is improved. One seeks, therefore, to obtain for them such rest and improved nutrition as can usually be had only in a hospital and with the services of a special nurse, and in most cases a persistent psychotherapy must be maintained because of the accompanying psychasthenia. Every attempt at cure must be initiated by a thorough examination of the entire body, and especially of the stomach, and a positive and emphatic statement as to the negative or trivial findings obtained. In the milder cases, and especially such as lack the asthenic basis, the patients may be treated in the office or in the hospital under ward nurses, but many failures or only temporary cures must be anticipated under such conditions. The most difficult problem is presented by the poor asthenic who cannot follow the ideal treatment. Some may be greatly benefited by proper instructions as to diet and rest, a simple explanation of the nature of their trouble, and the simple procedures indicated.

X-ray studies demonstrate the fact that gastric atony and the vertical "fish-

hook" stomach accompany nearly all of the gastric neuroses, and that in active cases emptying of the abnormally placed viscus is delayed from one or both of two causes: atony, and spasm of the pylorus associated with hyperacidity. The pain occurring with the latter is frequently confounded with that of appendicitis.

Using the pain onset as the gauge, the patient may obtain marked relief by taking a recumbent position on the right side or assuming the knee-chest position for several minutes at short intervals following a meal. Peristalsis may be further assisted by massage or by having the patient clasp the left knee and make strong intermittent pressure of the thigh against the abdomen while lying halfway between the prone and the lateral position. Helpful suggestion, abundant nourishment taken in small quantities and at short intervals, attention to any existing anemia, and the mechanical aid afforded by the procedures mentioned often accomplish wonders. In the light of our present knowledge it becomes ludicrous to treat gastric atony as a local disease or to attempt to correct secretory excesses, perversions, or deficiencies by drugs and diet alone. Rational nonsurgical treatment affords relief in the majority of cases. Cases of the chronic congenital type bear surgery badly and usually obtain from it either definite harm or but slight and transient improvement. C. L. Greene (Journal of the American Medical Association, December 23, 1911).

OPIUM, ACTION OF, ON THE URINARY SECRETION.

The diminution of urinary flow sometimes observed after administration of opium has been ascribed either to retention of the fluid in the bladder because of the depressing effect of the drug on the sphincter reflex or to abnormal dryness of the vesical mucous membrane owing to an effect on the epithelium and mucous glands of the bladder. The author conducted experiments in dogs in order to ascertain whether there was not, instead, a direct influence upon the secretory function of the kidney. The normal daily amount of urine was measured on five to seven successive days, and extract of opium then given to the animals in daily doses of 0.05 to 0.1 Gm. (¾ to 1½ grains). The urinary flow under the influence of the drug showed a reduction in the average daily output ranging from 77 to 183 grains (representing approximately 17 to 43 per cent. of the average normal output). Repeated catheterizations immediately or soon after spontaneous acts of micturition showed that the amount of residual urine after micturition was only 2 or 3 grams. The author, therefore, concludes that oliguria following the use of opium is due to diminished renal function. I. Teodoresco (Bulletin de la Société des Médecins et Naturalistes de Jassy, December, 1911).

PARALYSIS, TREATMENT OF INFANTILE.

The author emphasizes the necessity of thoroughly cleaning out the alimentary canal at the very inception of this disease. He believes he has seen a case in which the affection was effectually controlled by a complete evacuation at the first intimation of sickness. In this patient, copious enemata forced high up and repeated several times were resorted to. Although the child's life was threatened for a week, it then recovered, with paralysis limited to the muscles of the thenar eminence of one hand. These patients are apt to show obstinate constipation, perhaps from interference with

the spinal centers controlling defecation. Similar causes may operate to produce retention of urine. If this condition be unrelieved by warm baths, or hot compresses to the abdomen, a catheter may have to be resorted to—of course, only under proper precautions as to surgical cleanliness. H. J. Bogardus (Journal of the Medical Society of New Jersey, February, 1912).

PARALYSIS AGITANS, DIAGNOSTIC SIGN IN.

A new sign belonging to the early period of rigidity in Parkinson's disease is described by the author. It consists of a "cog-wheel," jerky or intermittent resistance of the extremities, elicited when the examiner grasps the wrist with one hand, steadies the arm with the other, above the elbow, and makes rapid flexion and extension of the arm. Instead of an even movement, without resistance, one, two, or perhaps three slight hindrances to the movement are experienced by the examiner. After the extremity has been passively moved for a short time, the jerks will slowly disappear, to return after a period of rest. The symptom may occasionally be elicited also in the lower extremity.

The value of this sign lies in the fact that it is present in cases in which there is real difficulty in making a diagnosis. The ordinary typical case, with the pill-rolling movement, festination, stooping, and mask-like features, is recognized at a glance, but there are less developed cases characterized by rigidity and absence of tremor, often limited to one extremity. In a number of cases in which the disorder began in one hand, with clumsiness and discomfort, the sign was elicited by the author, and some years later the more frank symptoms of paralysis agitans appeared. The sign may be absent in cases showing the characteristic tremor, but was never seen present in other diseases. H. N. Moyer (Journal of the American Medical Association, December 30, 1911).

ROSACEA, TREATMENT OF ACNE.

In acne rosacea accompanying acne indurata, the knife should be freely used, in order to deplete the dilated vessels of the parts affected. After incising the papules and pustules and scarifying the distended capillaries of the nose, Bier's cup should be applied for some time to the individual lesions. The patient should be told to apply hot compresses freely to the face and at night the following ointment:—

℞ Acidi salicylici, 0.6 (gr.x).
Sulphuris præcipitati, 4.0 (℥j).
Petrolati albi, 30.0 (℥j).
M. Ft. ung. Sig.: Use locally.

N. E. Aronstam (Indianapolis Medical Journal, November, 1911).

SALVARSAN, TISSUE NECROSIS FOLLOWING INJECTIONS OF.

Abscesses after using salvarsan result from one of three causes: improper preparation of the solution or suspension employed; insufficiently deep injection, and bacterial contamination. It is possible that the administration of a dose of the remedy which has undergone oxidation or other chemical change may also cause trouble. Fordyce found 3 punctured ampules among the 400 he has used, and advises that each container be tested by immersion in alcohol before removing its contents.

Examination by the author of a cavity caused by salvarsan necrosis showed an increase of fibrous tissue, with complete blocking of the smaller vessels and lymphatics by minute particles of salvarsan. Numerous small masses of the

substance were also found in pocket-like cavities distributed through the section. Evidence of inflammation was almost entirely lacking. In this instance the drug, employed in supposedly alkaline solution, had probably not been completely dissolved.

In treating these lesions the author has found it best to dissect or curette out the lining of the mummified tissue and allow the cavities to fill up by granulation. Balsam of Peru, with an occasional application of copper sulphate or powdered alum, is of value. When the healing process is well established, recourse may be had to an 8 per cent. scarlet red ointment. R. L. Sutton (Boston Medical and Surgical Journal, December 21, 1911).

SINUSES, TREATMENT OF.

In a case of discharging sinus associated with breast cancer the author, after using Beck's bismuth paste and other classic preparations without success, made the experiment of adding to Beck's paste some iodine tincture. After three injections, made within ten days, the sinus closed. The preparation was later used in other cases with very satisfactory results. It was made up of: Bismuth subnitrate, 30 Gm. (1 ounce); petrolatum, 60 Gm. (2 ounces); white wax and paraffin, of each, 5 Gm. (80 grains), and iodine tincture, 2 Gm. (30 minims). The iodine tincture is added after the other ingredients are thoroughly mixed, and the paste is to be well stirred whenever used. Where the amount to be used is large the proportion of iodine may be reduced in order to avoid excessive absorption and phenomena of intoxication. L. D. Green (California State Journal of Medicine, December, 1911).

SWEATING, TREATMENT OF EXCESSIVE.

For sweating feet, the author recommends bathing them every night with a warm 1 per cent. solution of potassium permanganate, and drying thoroughly. The next morning the following powder is to be dusted on:—

℞ Potassii permang., ʒij (8.0 Gm.).
Alumin. pulv. opt., gr. xx (1.25 Gm.).
Talc. pulv., ℥j (32.0 Gm.).
Zinci carbonat.,
Zinci oxid., āā ℥ss (16.0 Gm.).

M. Ft. pulv.

If powders be objected to, white stockings that have been soaked in a saturated solution of boric acid may be worn. The strength of the permanganate bath may be gradually increased, and in mild cases this will bring about a cure. When bromidrosis is a distressing feature, applications of formalin are more suitable, though it must not be employed above 10 per cent. strength if there be fissuring or a secondary dermatitis.

For sweating of the axillæ, the armpits may be bathed with weak vinegar in the mildest cases, after which the following dusting-powder may be applied on a pad of plain gauze:—

℞ Acid. salicylic., gr. xx (1.25 Gm.).
Amyli pulv., ʒij (8.0 Gm.).
Alumin. pulv., q. s. ad ℥iss (48.0 Gm.).

M. Ft. pulv.

In other cases the naphthol-glycerin lotion, recommended by Brocq, may be tried:—

℞ Betanaphtholis, ʒj (4.0 Gm.).
Glycerini, ʒij (8.0 Gm.).
Alcoholis, q. s. ad ℥iiss (80.0 Gm.).

M. Ft. lotio.

Sometimes in spite of all such treatment, the condition persists, with annoying bromidrosis. In such cases excellent results have been reported from short

exposures to the X-rays. G. Norman Meachen (Practitioner, October, 1911).

TRACHOMA, TREATMENT OF.

In suppurative and granular conjunctivitis not associated with corneal ulcerations, in acute trachoma with watery discharge and eczema of the lids, the author recommends the administration of subconjunctival injections of diphtheria antitoxin. After turning back the lids the eye is first washed with boric acid and saline solutions, and 1 c.c. of fresh antitoxin then injected in each lid, proceeding from within outward. The lids are then returned to the normal position, and with the eye closed a third c.c. is injected under the skin and muscle-tissue of the upper lid. The injections are followed by pain, acute edema resulting in closure of the eye, and an erysipelatoid eruption which overspreads the cheek and forehead. In thirty-six hours the inflammatory reaction disappears, lachrymation ceases, and the granules become attenuated or disappear. Three or four such treatments are given. Of 50 patients who received the injections 30 were practically cured and the others notably improved; in the latter the additional use of copper sulphate and mercury bichloride led to complete recovery. G. M. Pachopos (La Grèce médicale, December 15, 1911).

TYPHOID FEVER, LUMBAR PUNCTURE IN.

In a case of typhoid fever accompanied with intense and persistent headache, the authors practised lumbar puncture. The first puncture confirmed the diagnosis of meningeal hypertension, but had no effect on the headache. A second, however, besides showing the presence of persisting, though lessened, hypertension, brought immediate and lasting relief. The authors are of the opinion that meningeal hypertension may be present in various acute infections without producing a definite group of symptoms pointing to the meninges, and urge, in view of the readiness with which lumbar puncture is now performed after a little practice, and its harmlessness, that this measure be availed of in infections when there are present evidences of meningeal hypertension, particularly violent and persisting headache, even when they occur as isolated symptoms, as in the case reported. Oddo and Monges (Marseille médical; Bulletin médical, September 27, 1911).

VARICOSE ULCERS, TREATMENT OF.

Stress is laid by the author on the fact that varicose ulcer is a mechanical condition, and should, therefore, be treated mechanically. After first stimulating the granulations locally with nitrate of silver, 30 grains to the ounce, the author covers the ulcer with sterile gauze as a protective, and applies long straps of adhesive to the dry skin on either side of the lesion until the skin is well wrinkled. Fluid is seen oozing from the ulcer by this squeezing process for several days. It is best to have the foot elevated upon two pillows until it has returned to the normal size. Massage and attention to the bowels are advisable. The adhesive straps should be changed upon alternate days or oftener. They occasion some pain the first few days, but the subsequent cure is rapid—three weeks to seven weeks in the author's cases. In none of the cases was there a recurrence. Elastic stockings, preferably made of linen, and put on over a white cotton stocking to absorb the perspiration, may be used after curing the ulcer to support the dilated veins. A. Gills (New York Medical Journal, December 2, 1911).

Clinical Summary

Practical hints from articles and abstracts that have appeared in the Monthly Cyclopedia and Medical Bulletin during the current year.

Acne. TREATMENT. Vaccines useful for selected cases: (1) Cases with deep-seated pustules, occupying a large area; micro-organisms abundant, staphylococcus greatly predominating. Autogenous staphylococcic vaccine most efficient, but must be administered over some months. (2) Cases with lesions indolent and superficial, chiefly inflamed comedones, with but little pustulation. Stock acne bacillus vaccine here gives good results in many instances. Administer 5 to 10 millions acne bacilli every week or ten days. (3) Cases combining the more and less severe lesions of the first and second groups. Use mixed vaccines of staphylococcus and acne bacillus. Other measures: Remove other etiological factors, such as reflex circulatory disturbance due to nervous strain in adolescence and digestive disorders. Correct constipation and regulate diet and mode of life. Locally, squeeze out comedones and wash often and vigorously with soap and water; if suppuration present, puncture or incise pustules; bathe with hot water, and dress antiseptically; disinfect skin and have garment worn next to affected part frequently changed; X-rays; radium for indurated nodules. *Morris and Dore.* Page 93

Anemia, Pernicious. TREATMENT. Case in a pregnant woman at term in which 4 intragluteal injections of defibrinated human blood, amounting altogether to 159 c.c., proved markedly beneficial. *Esch.* 44

Appendicitis, Chronic. DIAGNOSIS. Pain chiefly in right lower quadrant, if unassociated with attacks of epigastric pain and nausea, is seldom due to appendix; before diagnosing chronic appendicitis exclude every other possible condition.

TREATMENT. Appendectomy alone frequently does not cure. This is true especially of patients with chronic constipation; a long, dilated cecum, with other evidences of enteroptosis, is usually present. *Stanton.* 33

Arthritis, Gonorrheal. TREATMENT. Intra-articular injections of iodine tincture, 5 Gm. on the average, used in many cases of various types, with considerable success. Increased swelling at first, then cessation of joint effusion, disappearance of pain, and return of motion. *Hildebrand.* 37

Arthritis, Rheumatoid. TREATMENT. 1. Liberal diet, including plenty of animal food. 2. Guaiacol carbonate in cachets; dose at first from 5 to 10 grains *t. i. d.*, to be increased by 1 to 2 grains each week up to 15 or 20 grains. If given long enough (at least twelve months) this will in many cases arrest disease, diminishing size of joints and permitting of increased movements; it relieves pain markedly. 3. Potassium iodide in 10-grain doses, combined with the guaiacol, increases benefit; its depressing effect to be counteracted by tonics. 4. Thyroid preparations are of value in early cases associated with Raynaud-like symptoms and cramps in extremities. 5. Hot baths, superheated air, or electric light; douche masssage; peat baths or brine baths. 6. Passive movements and massage. 7. Bier's hyperemia, where affected joints few. 8. Fibrolysin followed by massage, where joints more or less fixed owing to fibroid thickenings. 9. Irrigations of colon, where arthritis secondary to chronic colitis. *Luff.* 112

Asthma, Bronchial. TREATMENT. Importance of chronic coprostasis and intestinal autointoxication in etiology of asthma shown. Necessity of bowel regulation in the treatment emphasized. *Ebstein.* 33

Epinephrin hydrochloride found most effective drug next to morphine in treatment of the asthmatic paroxysm in 31 cases. Ten to 15 drops of 1: 1000 solution injected under or into skin give immediate relief, which is often also lasting. Blood-pressure not increased by it, but rather lowered. Stramonium cigarettes or fumes give comfort in some patients, hypodermics of nitroglycerin in but a few. Atropine safer but less sure than morphine, which should be last resort. Treatment between paroxysms: Remove reflex causes such as deflected nasal septum, sensitive point near inferior turbinates, disordered stomach, and constipation. Overcome obesity where present. Give prolonged course of potassium iodide, 10 to 15 grains (0.65 to 1.0 Gm.) three times daily, and thereafter alternate use of drug for 10-day periods with 10-day intermissions. *Lemann.* 94

Blepharitis. TREATMENT. Marginal blepharitis in children to be treated as follows: 1. Remove crusts 2 or 3 times daily with sodium bicarbonate solution (gr. x to f℥j) or, at first, with warm olive oil. 2. After careful washing rub into roots of lashes a stimulating mercurial ointment (gr. viij of ammoniated mercury or gr. iv of yellow oxide of mercury to ℥j of white petrolatum). 3. If much discharge, especially purulent, cutting of lashes will facilitate cleansing; in worst cases, epilate all lashes involved in pustules. 4. If lid much excoriated, paint 1 per cent. silver nitrate solution on surface daily. 5. Keep lids closed with wet carbolic dressing (1 to 80) for a few days in severe cases, removing it *t. i. d.* to cleanse lids; avoid entrance of solution into eye. 6. Keep child from reinfecting lids with fingers by use of

lightly smoked, domed protecting spectacles, or in the very young by cardboard splints bandaged on flexor surface of elbows. 7. Prescribe correcting glasses if required, to remove cause of ocular hyperemia. *Lawson.* Page 103

Cholera. TREATMENT. Potassium permanganate given internally with some success. Dose, 0.4 to 0.5 Gm. (6 to 7½ grains) *per diem*, dissolved in 400 to 500 Gm. of pure water and given every half-hour. Drug continued two or three days in diminishing doses. Especially valuable in cases with hemorrhage. Iodine tincture given in 42 cases, with 34 recoveries. Dose, 40 to 60 minims daily, dissolved in 250 Gm. of distilled water, given every hour. Copious bowel irrigations with warm iodine solution or 1:1000 potassium permanganate solution also used with benefit in violent cases. *Logotheti.* 35

Colitis, Mucous. TREATMENT. Apply to abdomen at night towel soaked in magnesium sulphate solution, ½ ounce to 1 pint of water, at 75° F. Irrigate rectum with 2 gallons of same solution at 85° to 90° F. Mucus disappears, and pain and gas formation diminish. Milk diet, with fruit, especially grapes, added, also effective; 1½ quarts of milk to be taken during day and 1 pint of hot milk at bedtime; continue for ten days to two weeks. Crude tar of *Pinus palustris*, mixed with flour and ordered in No. 2 gelatin capsules, gave good results; 2 or 3 capsules one hour after meals. *Joseph.* 42

Constipation with Diarrhea. Found in gouty patients, after abdominal and rectal operations, in pulmonary tuberculosis, in achylia gastrica, and in hypochlorhydria with gastrointestinal atony.

TREATMENT. A few (3 to 5) 2- to 5- grain doses of calomel, followed by magnesium sulphate, or sodium sulphate, or a laxative water; in other cases, castor oil in ½- to 1-dram doses 2 or 3 times daily, continued for a month. Ichthyol valuable in cases with much fermentation. Physical treatment with oil or oil-emulsion enemas, hot baths with massage, or hot wet packs changed every 15 to 30 minutes. Rest in bed. Gastric lavage. Well-prepared food. Strong, black coffee with plenty of sugar often useful; also good beer or cream; bread spread with butter and honey; stewed or dried fruit (latter soaked in water); cheese; agar-agar, etc. Modest exercise alternating with rest; salt baths, sitz baths; sensible wearing apparel; correctly fitted corset. *Bernheim.* 69

Coryza, Acute. Aromatic spirit of ammonia and sweet spirit of niter recommended as best agents to "abort" a cold. *Beverley Robinson.* 47

Diarrhea, Infantile. TREATMENT. Soy flour useful in summer diarrhea and some forms of intestinal indigestion; given in form of dilute gruel with or without addition of barley flour and later condensed milk or cows' milk. One to 2 level tablespoonfuls of soy flour to the quart suffice at first; later increased to 4 spoonfuls. Soy-bean, barley, and condensed-milk mixtures useful where, cows' milk disagreeing, there is difficulty in finding food sufficiently nutritious for child. Orange juice advisable from time to time to prevent tendency to scurvy. *Ruhräh.* 52

Eczema. TREATMENT. Alcohol useful as antiparasitic and to relieve itching. Apply 90 per cent. alcohol twice daily to and around lesions before carrying out other local measures. Good results even in rebellious cases. Applicable in all forms of eczema except those with abundant watery discharge. Continue long after affection overcome, to prevent recurrence. *Monatsh. f. pr. Dermat.* 96

Empyema. TREATMENT. Convenient method of drainage of empyema in young children described. After locating pus with aspirating needle, insert narrow-bladed knife under it and enlarge wound just above a rib enough to admit snugly a short drainage-tube of rather stiff rubber, which is held in place by a cuff of slightly larger tubing, a piece of tape slipped over it, and adhesive plaster fastening tape to skin. Connect rubber tube with glass tube passing through cork of a pint bottle and dipping in warm sterile salt solution contained in it. Raise bottle till solution runs slowly into pleural cavity, then lower, thus irrigating pleura. Change salt solution two or three times daily, or as often as necessary to keep it fairly clean. *Kenyon.* 36

Erysipelas. TREATMENT. Solution of 20 drops of phenol in 25 Gm. (6 drams) of pure neutral glycerin recommended. It is painted over affected area and surrounding skin, but must not come in contact with mucous membranes. *Lodi.* 98

Esophageal Carcinoma. TREATMENT. Small amounts of hydrogen peroxide solution of 1 to 2 per cent. strength, sipped at intervals of an hour, facilitate descent of food, even in late cases where rectal feeding has been resorted to. *Liebermeister.* 98

Furuncle. TREATMENT. Seen early, a superficial furuncle may be aborted by inserting pointed matchstick, dipped in phenol, deeply into its center; if lesion deep, inject several drops of liquefied phenol at base of lesion. For a furuncle seen late in first stage: Scratch off central vesicle and apply a Bier cup. Dress with sterile gauze wrung from normal saline solution with 1 per cent. sodium citrate, after inserting a bit of rubber dam in opening if there be tension. Protect surrounding skin from citrate with ointment, and over citrate gauze apply waxed paper or oiled silk, covered by compress and bandage. Cupping and dressing may be repeated every four hours until slough loose, when latter is removed with small forceps. Apply citrate only three days. Also give citrate internally, 15 grains (1 Gm.) *t. i. d.*

after meals. Where bluish, flabby granulations: Strap edges of wound with adhesive strips, dry granulations, mop with iodine tr., and dust with Bier's powdered silver nitrate. Snip off exuberant granulations. To promote epithelial regeneration, use 8 per cent. scarlet red ointment or amidoazotoluol. Prevent autoinoculation by shaving skin around furuncle and disinfecting with 70 per cent. alcohol, tincture of iodine with benzine, diluted liquor formaldehydi, or aluminum acetate solution. Repeat local disinfection with benzine at each dressing. Where furuncle first seen in stage of softening, incise and drain; latter may be assisted with a Bier cup. For very large lesions or in furuncles of face, inject 3 per cent. novocaine under base, wait five minutes, and remove core from tumor with small curette. Where supposed boils become carbuncles, excise the whole area, controlling bleeding with cautery and compresses, and apply pure liquefied phenol. For recurring furunculosis: Bacterin therapy with killed staphylococci; initial dose, 100 million bacteria, increased by weekly doses up to 1 billion. Yeast also useful. *Skillern.*
Page 99

Gastric Dilatation. DIAGNOSIS. Vomiting, abdominal pain, distention, constipation (occasionally diarrhea), collapse, splashing sounds, and peristaltic movement over stomach, appearing suddenly in the course of pneumonia, should at once suggest acute gastric dilatation.

TREATMENT. 1. Introduce stomach tube and practise lavage as often as distention occurs, even in cases with collapse. 2. Turn patient on right side or face. 3. Interdict food and drink by mouth. 4. Strychnine and eserine hypodermically apparently useful in some cases. *Fussell.* 107

Gastric Ulcer. DIAGNOSIS. Rice, milk, potatoes, and prunes cause positive reaction in benzidine test for occult blood in stomach contents, and hence must be excluded from diet before test is made. *Floersheim.* 105

Watermelon pulp found to cause positive reaction in guaiac-turpentine test for occult blood in feces. *Newbold.* 106

Gonorrhea, Acute. TREATMENT. Method causing arrest of suppuration in three to five days described. Inject 5 to 15 c.c. (¼ to 4 drams) of 0.25 per cent. protargol solution into urethra every half-hour in daytime and every hour at night. To be retained two to ten minutes, during which time urethra is gently massaged from behind forward. Increase strength of solution gradually. Patient should ingest large amount of fluid, in order to be able to urinate before each injection. Continue injections, given as often as possible, two or three weeks after cessation of pus. Then alternate protargol with lead acetate and zinc sulphate, of each, 0.3 Gm. (2 grains) in 200 Gm. (4⅔ ounces) of water. *Kuhn.* 37

Gonorrheal Cervicitis and Endometritis. TREATMENT. I. Acute cases: 1. Confinement to bed. 2. Keep emunctories active. 3. Limit diet. 4. Cleanse vagina frequently with large amounts of hot saline solution or hot water containing boric acid or a weak iodine solution. Use irrigator with nozzle projecting a straight forcible stream, and pinch mucous membrane of introitus around nozzle, to flush cavity satisfactorily. Intrauterine measures and pelvic operation intervention contraindicated. II. Subacute cases: 1. Soften and dilate cervix with Goelet's uterine electrodes and galvanic current. 2. Flush uterine cavity with hot iodine solution, 1 dram (4 c.c.) of the tincture to a quart of water, or silver nitrate, 1: 5000. 3. As condition improves, substitute daily intrauterine injections of iodized phenol (equal parts of iodine tincture and phenol) or 1 per cent. silver nitrate. Use syringe with long pliable nozzle, with its tip wrapped with cotton; inject fluid into cotton and withdraw syringe. Insert iodine-glycerin tampon (1 dram to 4 ounces), which patient is to remove next morning. Remove cotton within uterus at next visit. III. Chronic cases: 1. Puncture, evacuate, and sterilize diseased Nabothian glands. 2. Touch opened glands and erosions about os with pure iodine tincture. 3. Intrauterine irrigations and injections as above, three times weekly. 4. Curettage of uterus, thoroughly scraping internal os and cervical canal, followed by swabbing with iodine tincture and appropriate after-treatment. *Dannreuther.*
100

Gout. TREATMENT. Radium emanations used in 400 cases of gout and chronic arthritis. Patient in closed radium room for 24 to 36 sittings of two hours each. Injections of soluble radium salts near involved joints given in addition; also superheated air, electric light, and brine baths. Absolute rest in bed an adjuvant. Out of 50 cases in which blood was examined before and after treatment, uric acid disappeared in 37 instances, synchronously with marked amelioration. Cases in children particularly benefited, but cases of senile tuberculous and syphilitic arthritis and cases of very long standing, with marked joint changes, not suited for radium treatment. Low purin diet should also be tried for a few weeks or months; if ineffective, replace it by simple mixed diet, with as much of green vegetables and fruit as possible. *Gudzent.* 95

Hay Fever. TREATMENT. Calcium creosote solution diluted with 8 to 10 parts of water recommended; throat and nasal fossæ to be sprayed every hour or two for two or three days. Potassium iodide, 5 grains *t. i. d.*, effective in hay asthma; arsenic may be added with advantage. *Kolipinski.* 77

Hepatic Affections. TREATMENT. Combination of sodium salicylate and sodium benzoate found useful for cholagogue and "flushing-out" effects in various disorders, especially

suppurative angiocholitis, cholecystitis, and lithiasis. Sodium salicylate induces flow of concentrated bile; sodium benzoate, of dilute bile. Relative amounts of two salts to be varied according to indications. Formula suggested: Sodium benzoate, 0.75 Gm. (12 grains); sodium salicylate, 0.5 Gm. (8 grains); sodium borate, 0.25 Gm. (4 grains); rhubarb, 0.3 Gm. (5 grains); to be taken *t. i. d. Polain-Cartier.* Page 38

Hip-joint, Congenital Dislocation of. TREATMENT. Manipulative method used in 33 cases. If used at earliest possible time after infancy, the method may be expected to yield stable articulation with perfect function in 60 to 70 per cent. of cases; in remainder condition is usually much improved. Attended by little or no danger in children below 8 years of age. *Simpson.* 38

Hyperchlorhydria. TREATMENT. Rhubarb and soda, or rhubarb and magnesia, either in mistura rhei et sodæ or in Gregory's powder, useful in gastric disorders with fermentation or hyperacidity. *Beverley Robinson.* 47

Hyperthyroidism. DIAGNOSIS. Elevation of temperature found an early symptom in many cases, especially mild ones. When, in absence of acute or other tangible disease, there have been loss of weight and augmented nitrogen and phosphoric acid excretion, and when, after administration of a thyroid or iodine preparation, there occur the characteristic psychoneurotic and cardiac symptoms of excessive thyroid activity, elevation of temperature is a thyrotoxic phenomenon. *Stern.* 39

Hypothyroidism. DIAGNOSIS. Blood showing mild leucocytosis and relative lymphocytosis with eosinophilia from 3 per cent. up is highly suggestive of thyroid insufficiency. *Collins and Kaplan.* 40

Intestinal Paresis, Postoperative. TREATMENT. Pituitary extract used in 21 laparotomy cases. Dose, 16 minims (1 c.c.), commenced six hours after operation and repeated every few hours until 18 doses given. All patients passed flatus freely within a few hours, and were free of pain and distention. In all cases but 2, bowel action was obtained after a simple enema. Three intramuscular injections of 1 c.c. each recommended during first twenty-four hours as routine practice in laparotomy cases. Pulse rate remains much lower than usual. *Bidwell.* 44

Jaundice, Catarrhal. TREATMENT. Cold injections of water or normal saline solution recommended, favoring biliary flow by promoting peristalsis. *Polain-Cartier.* 38

Laryngitis, Acute. TREATMENT. Freshly powdered cubeb, taken frequently and in moderate amount dry on tongue, found of service in acute throat disorders. *Beverley Robinson.* 47

Lupus. TREATMENT. Pfannenstiel's method found useful in lupus of nasal mucous membranes. Give patient 45 grains (3 Gm.) of sodium iodide daily, divided into 6 doses. Every morning cleanse nasal cavity of crusts with nasal douche containing sodium chloride and boric acid, and, after drying, insert tampon of sterile gauze, in contact with affected parts. Have patient keep tampon constantly moist with 2 per cent. hydrogen peroxide solution. Free iodine is thus liberated from iodide excreted by nasal mucosa, exerting its effect on lesions. In early cases ulcerations heal in one to three weeks. *Sequeira.* 102

Mastoiditis. DIAGNOSIS. A small mastoid process with thick outer cortex and small antrum is especially subject to "atypical" mastoiditis, condition escaping detection until serious complications appear. Suspicious symptoms in such cases are: 1. Discharge from ear more profuse than one would readily expect from middle ear alone and continuing profuse for two or three weeks. 2. Increased swelling of posterosuperior wall of external auditory canal. X-ray found useful for early diagnosis in a number of cases. *Crockett.* 41

Blurring of outline of tip of mastoid elicited by grasping both mastoids anteriorly and posteriorly between fingers and noting difference of definiteness of outline on the healthy and abnormal sides found valuable as corroborative evidence in early, doubtful cases of mastoiditis. Swelling from otitis externa may be confusing, but this is usually reduced in a few days by local treatment and ice-bag, while blurring of mastoid remains. *Alderton.* 104

Nervous Affections. DIAGNOSIS. External malleolar reflex (Chaddock's sign), indicating involvement of pyramidal tracts, found in 20 cases to be equal in value to the extensor plantar reflex (Babinski). It is more delicate, appears earlier, and often lasts longer than the Babinski. Consists of irritating outer side of foot below external malleolus with nail file; if positive there occurs dorsal extension of toes. *Ingram.* 95

Otitis Media, Acute. TREATMENT. Relation of acute pharyngitis, nasal-sinus, middle-ear, and mastoid inflammations to an "active autotoxic state" of the system emphasized. Calomel in $\frac{1}{10}$-grain (0.006 Gm.) doses, frequently repeated up to 1 or $1\frac{1}{2}$ grains, found valuable to stimulate defensive powers of body and shorten convalescence. Used in combination with local treatment. Calomel, followed by castor oil or salines, given every other day. *Snow.* 42

Pain, Local. TREATMENT. Combination of menthol and methyl salicylate in hydrated wool-fat, covered with cotton and gauze bandage, recommended to relieve local pain where skin is intact. *Beverley Robinson.* 47

Paralysis, General. TREATMENT. Salvarsan administered intravenously in a case of paresis in maniacal stage, with marked improvement. *Holland.* 73

Placenta Prævia. TREATMENT. Absolute quiet, rupture of membranes when required, and irrigation with hot water recommended. Water should be at 45° to 48° C. (113° to 118° F.), and at least 7 or 8 liters of it should be used. Repeat irrigation if necessary to check hemorrhage. Seventy cases thus treated without a death. Infection from tampon and mishaps in version or introduction of bag thereby avoided. When hemorrhage arrested, spontaneous expulsion of fetus to be patiently awaited. Instrumental dilatation contraindicated. *De Bovis.*
Page 44

Plague, Bubonic. TREATMENT. Early crucial incision into the swollen glands employed in 62 cases, with 54 recoveries. Causes immediate improvement in patient's condition, temperature being lowered and headache alleviated. Wounds dressed with iodine lotion, 1 dram to the ounce of water. *Nesfield.*
45

Pleuritis. DIAGNOSIS. X-ray studies showed that location of fluid in chest in serofibrinous pleurisy depends upon the position assumed most constantly by patient during acute stage, and that exudates of this type are but slightly, if at all, mobile. These facts are of assistance in differentiation of serofibrinous from other varieties of effusion. *Engelbach and Carman.* 106

Pneumonia, Lobar. TREATMENT. Creosote inhalations and moderate bloodletting, especially with leeches, recommended. *Beverley Robinson.* 47

Stock pneumobacterins, in doses of 25 to 600 millions, used in 20 cases, with 15 per cent. mortality; 30 other similar cases, under usual methods of treatment, showed 40 per cent. mortality. In some of the cases, strikingly prompt benefit followed use of bacterins; in others results were less marked or *nil*. Results seemed more definite with the larger doses. Dosage can be adjusted according to clinical phenomena; where malaise, headache, chilliness, or definite rigors, with rise of temperature, follow an injection, it is unwise to increase dose. *Robertson and Illman.* 107

Pneumoperitoneum. DIAGNOSIS. In presence of free gas in peritoneal cavity, there occurs a concentric diminution of area of hepatic dullness, *i.e.*, dullness disappears at same time from upper border of liver downward and from lower border of liver upward. In tympanites, on the other hand, liver dullness disappears from below upward only. This distinction found useful in early diagnosis of perforation in typhoid fever. *Berg.*
108

Pneumothorax. DIAGNOSIS. Positive coin test, displacement of heart, and, in right-sided cases, displacement of liver are the most important diagnostic signs, occurring in about 90 per cent. of cases. Succussion splash and metallic tinkle occur in 30 or 40 per cent. *Cruice.* 46

Poliomyelitis, Acute. ETIOLOGY. Poliomyelitis is propagated by dust. Nasopharynx is probably point of entry. *Neustaedter and Thro.* 46

DIAGNOSIS. Lumbar puncture shown to be valuable in distinguishing poliomyelitis of meningeal type from acute cerebrospinal meningitis. Negativity of cerebrospinal fluid in poliomyelitis diagnostic; in meningitis, fluid shows marked turbidity, coarse clot formation, great excess of albumin, copious deposit of polymorphonuclear cells, and meningococci. *Forbes.* 46

Postnasal Catarrh in Children. TREATMENT. If condition acute, paint throat several times daily with boroglyceride, or, in older children, spray with a ¼ grain to the ounce solution of tartrated antimony while patient inspires deeply. Later, add an equal amount of glycerite of tannin to the boroglyceride. Where painting throat resisted, instill into nostril several times daily, while child lies back with head on pillow, a solution of 5 to 10 grains of resorcin to the ounce of saline solution, 10 grains of boric acid to the ounce of water, or 15 grains of sodium bicarbonate to the ounce. As redness of pharynx fades, apply pure glycerite of tannin or a paint of 12 grains of iodine and 15 grains of potassium iodide to the ounce of glycerin, with 5 drops of oil of cinnamon or peppermint. After all redness gone, use an astringent iron paint of 1 dram of the stronger iron perchloride to an ounce of glycerin. For anorexia: an iron tonic; stay in country or at seaside. Keep child well protected from cold for some time after. *Eustace Smith.* 34

Puerperal Sepsis. TREATMENT. Intravenous injections of mercury bichloride used in 11 cases, with 6 recoveries. Measure considered worthy of trial in severe cases. Twenty drops of a 1 per cent. solution injected once or twice daily; 1 to 4 grains of bichloride used during the treatment. Precautions necessary: 1. Teeth to be carefully cleansed. 2. Salines to be omitted during treatment. *Stowe.* 110

Rheumatism, Acute Articular. TREATMENT. *Streptococcus pyogenes* vaccine used in 6 cases, in 4 of which no salicylates were given, with good results. Temperature quickly fell in every case, pain ceased, and inflammatory phenomena disappeared. Stock vaccine from several strains of streptococcus used in these cases, but author thinks it preferable to employ a mixed streptococcus and staphylococcus (*aureus* and *albus*) vaccine. *Wolverton.* 48

Rheumatism, Chronic. TREATMENT. In rheumatic conditions associated with anemia and in sore throat of rheumatic origin, following mixture recommended: Dissolve 1 dram (4 Gm.) of sodium salicylat ounces (60 c.c.) of water. Add liqu perchloridi, plus an ounce of water,

dark purple mixture. Then add 1 dram of potassium bicarbonate dissolved in 1 ounce of water, and fill up bottle to 8 ounces with water. *Drinkwater.* Page 51

Lime-poor diet found useful in certain forms of subacute and chronic arthritis, especially deforming arthritis, cases with joint pains following acute polyarthritis, and cases of chronic spinal ankylosis. Cases should be selected by test-diet, to make sure of calcium retention, as other patients will not respond to the treatment. Articles of food allowed in lime-poor diet: White or aleuronat bread, rice, tapioca, wheat flakes, sago, tomatoes, mushrooms, white of egg, meat bouillon, beef, calves' liver, tongue, sweets, vegetable fats, light beer, carbonated waters, port. Distilled water to be used in preparation of food. After six or eight weeks restrictions may be somewhat relaxed. *Hirschberg.* 110

Ringworm, Eczematoid. Fifteen cases studied. Three main types: (1) Acute vesiculobullous, bursting out suddenly like acute vesicular eczema; exudation into vesicles and bullæ commonly pinkish, owing to blood. (2) Chronic intertriginous of the toes; white masses of epithelium between toes with definite margin and slight vesiculation at dorsal edge of interphalangeal skin; intense itching. (3) Chronic hyperkeratotic of soles and palms, with overgrown horny layer and scattered small indolent pustules. DIAGNOSIS microscopic; demonstration of *Epidermophyton inguinale*, an ectothrix, or other organism. TREATMENT. Ointment of 5 per cent. benzoic and 3 per cent. salicylic acids in soft paraffin and cocoanut oil. For feet and hands can increase strength up to 1 dram benzoic and ½ dram salicylic acids to ounce. Where this fails, use 1 dram of chrysarobin in equal parts of chloroform, alcohol, and acetone to the ounce; apply on rising, pulling socks over it as soon as dry; wash off at bedtime. *Whitfield.* 96

Sciatica. TREATMENT. Where acute attack, in spite of the usual measures, persists longer than ten to fourteen days, sulphur baths or hot carbon dioxide baths (102.7° to 104° F., and lasting twenty minutes) should be employed, or heat applied in other ways. If ineffective, author counsels treatment by injections of saline solution and air: 1. Injection of 800 to 1000 c.c. of air, filtered through cotton, under skin on outer aspect of leg. 2. Injection of 60 to 80 c.c. of 0.8 per cent. salt solution, with 0.01 to 0.02 Gm. of novocaine added, just below sacrosciatic notch, as close to nerve as possible. 3. Injection of 10 to 20 c.c. of salt solution, with 0.01 Gm. of novocaine into epidural space of inferior lumbar region, needle being passed in and up through coccygeal notch; preliminary anesthesia of course of injection with novocaine. 4. Where very severe pain and contractures of lumbar muscles, injection of 10 to 15 c.c. of salt solution between third and fourth lumbar vertebræ into epidural space. Injections to be repeated at intervals of three or four days, substituting 1 to 1.2 per cent. for 0.8 per cent. saline. Two to five series of injections cure obstinate cases. *Sicard.* 114

Skull Depressions at Birth. TREATMENT. Persistent firm pressure with fingers of both hands upon bone surrounding depressed area found effective, causing depressed bone to snap back to normal position. *Hoffmann.* 102

Small-pox. TREATMENT. Mixture of 10 per cent. iodine and 90 per cent. glycerin painted over pustules 2 or 3 times daily in 85 cases; caused drying of lesions and arrest of tissue destruction, and prevented pock-marks. Pustules on face may be opened with sterile instrument and touched with iodine tincture. Desquamation frequently almost completed in four to six days. All cases recovered. *Rockhill.* 115

Sterility. TREATMENT. Case of sterility, with azoöspermia, due to bilateral gonorrheal epididymitis eleven years before, in which bilateral epididymodeferential anastomosis proved curative, spermatozoa reappearing about a year after the operation. *Delbet.* 98

Syphilis. TREATMENT. Salvarsan given intravenously in 10 pregnant women in doses of 0.5 Gm. and subcutaneously in 8 newborn infants in doses of 0.03 Gm. Injections in women in dose mentioned found to be not without danger to fetus, pronounced weakening in heart-sounds being noted in days succeeding injection in one-half the cases. Child of a mother given first injection of salvarsan five and one-half months before parturition was born healthy; a child born seventy-two days after salvarsan injection was syphilitic. In the newborn, salvarsan was found to act promptly on pemphigus and to cause disappearance of spirochetæ from lesions; it is capable of producing prompt and lasting recovery from hydrocephalus of syphilitic origin. Smaller doses now advocated by author: 0.2 Gm. for pregnant women, repeated in six days; 0.01 for newborn infants, repeated twice or thrice at six-day intervals. *Bar.* 49

Emulsion of salvarsan in lanolin oil found a satisfactory mode of administration in 30 cases. *Burke.* 50

Tabes Dorsalis. TREATMENT. Salvarsan administered intravenously in 4 cases, along with hydrotherapeutic measures, with striking improvement. *Holland.* 73

Tetanus. TREATMENT. Phenol injections used in 5 consecutive cases, all recovering; 2 other cases treated with antitoxin died. Ten minims of 10 per cent. solution of pure phenol in sterile water, diluted to 30 or 40 minims, injected deep into muscles, at first every three hours, later at longer intervals as improvement appeared. Injections made into buttocks, deltoids, or pectorals. No untoward results. Urine, however, should be watched

for smoky color, as a precaution. Severity of convulsions always diminished by the treatment, sometimes after third or fourth dose. In fully developed cases, second dose to be given one hour after first. Original wound to be excised or cauterized, as usual, with strong solutions of phenol, silver nitrate, or nitric acid. *Kintzing.* Page 115

Tuberculosis. TREATMENT. Tuberculin applied locally in 10 cases, comprising suppurative cervical adenitis, anal fistula, and sinuses, with early cures in previously rebellious cases. Parts first irrigated with salt solution, then tuberculin solution sprayed on, or, in sinuses, introduced with syringe and flexible cannula. Mouth of sinus sealed with collodion for several hours. Initial dose must be small; later dose is carefully increased, avoiding general reaction. Locally there is pronounced reaction at first, then stimulation of processes of repair. *Beasley.* 56

Tuberculosis, Pulmonary. DIAGNOSIS. Hemoptysis occurring without warning in young adults, and unassociated with further signs or symptoms of tuberculosis, is probably of tuberculous origin and should be so treated. Hemoptysis in pneumonia, bronchitis, asthma, or following trauma should lead to suspicion of an underlying tuberculous process. *Bartlett.* 101

TREATMENT. Citrate of iron hypodermically found very efficient in relieving the secondary anemia in 257 cases, 70 per cent. of which were advanced or far advanced cases. Employed routinely where reduction in hemoglobin greater than 10 per cent. Dose, 0.05 Gm. (⅚ grain), injected in buttock. Italian preparations found least irritating. Maximum benefit attained after 30 to 40 consecutive daily doses. *Bullock and Peters.* 32

Comparative study of 146 cases receiving tuberculin and 234 treated by hygienic-dietetic method alone. Conclusion reached that tuberculin is valuable in tuberculosis, especially in moderately advanced cases, and is of special value as a protection against relapse. Autogenous vaccines used in 75 other cases; temperature rapidly returned to normal, expectoration diminished, and hemorrhage was rare. *Pettit.* 57

Typhoid Fever. DIAGNOSIS. Russo's test found a valuable diagnostic aid in early cases. To 4 or 5 c.c. of patient's urine add 4 drops of 0.1 per cent. aqueous solution of methylene blue. After thorough admixture examine against light; a mint- or emerald-green color is positive, whereas any bluish tint renders test negative. Urines containing bile also give the test; therefore, this must first be excluded. *Rolph and Nelson.* 58

Early recognition of perforation facilitated by observation of concentric diminution of liver dullness. (See Pneumoperitoneum.) *Berg.* 108

Careful, repeated leucocyte counts claimed to afford earliest reliable means of typhoid diagnosis for general practitioner. Characteristic leucocytic picture: 1. Leucopenia, progressive, very likely preceded by slight leucocytosis. 2. Initial moderate polynucleosis, lasting first four to eight days. 3. Progressive, marked lymphocytosis, obscuring polynucleosis and lasting well into recovery. 4. Increase in large mononuclears, beginning with onset of disease. 5. Sudden, early, and complete disappearance of eosinophiles. *Hutton.* 116

TREATMENT. Ipecac used in 6 cases with good results. In every case but 1 patient became afebrile within four days. Dose in the earlier cases, 30 grains (2 Gm.) on first evening, diminished daily by 5 grains down to 10 grains (0.65 Gm.); in other cases, 10 grains morning and evening, later decreased to 10 grains once daily; drug was given in salol-coated pills, preceded by tincture of opium to prevent vomiting. *Frazier.* 103

Uremia. DIAGNOSIS. Depression of reflexes and positive Babinski phenomenon found valuable as a very early indication of oncoming uremia. Present in the stage of "preuremia." *Carschmann.* 48

Urethritis. DIAGNOSIS. Improved method of differentiating anterior from posterior urethritis described. Slowly inject 1 c.c. of 0.5 per cent. aqueous solution of basic fuchsin into anterior urethra and have it retained one-half to one minute, with slight massage. Allow fluid to escape and have patient urinate in 2 high glasses. If only stained shreds are present, there is no posterior urethritis; if only white, unstained shreds, infection is in posterior urethra; if both stained and unstained, process is both anterior and posterior. *Wolff.* 118

Vaccination Site. TREATMENT. Picric acid applied to vaccinal lesion in 22 children, to harden tissues and prevent local infection. Four per cent. solution in 95 per cent. alcohol painted over and around vaccinal site forty-eight hours after vaccination and daily thereafter. Inflammatory reaction and constitutional disturbance lessened. No interference with success of vaccination. *Schamberg and Kolmer.* 118

Vincent's Angina. DIAGNOSIS. Signs distinguishing it from lacunar tonsillitis are: 1. Absence of fever. 2. Pain more localized on affected side, and is severe, lancinating. 3. General malaise and physical exhaustion very marked.

TREATMENT. First perform gentle curettage of the tonsillar crypt involved. Then apply 12 per cent. silver nitrate solution. *Wherry.* 58

Salvarsan used locally, first in solution, then in powder, in a severe and obstinate case; prompt recovery. *Achard and Flandin.* 118

Vomiting of Pregnancy. T
1. Magnesium carbonate, 2 di
nesium sulphate, 1 ounce; mint v

1 ounce; water, to make 8 ounces; wineglassful to be taken early in the morning. Cascara given daily in small doses for two or three weeks. 2. Simple diet; evening meal to consist only of thin porridge, gruel, or arrowroot. Koumiss; champagne, ½ hour before a meal. 3. Where relief from nausea only obtained after complete evacuation, encourage latter by the sipping of warm water. 4. Absolute recumbency in severe cases. 5. Drugs: Effervescing mixtures, salicin emulsion, phenyl salicylate, compound tincture of cardomom in dram doses, antipyrin or acetanilide with sodium bromide, small chloral and potassium bromide enemata, wine of ipecac in hourly minim doses; validol found most effective drug; menthol, 1 part in 60 of water, with 30 parts of alcohol or brandy, or chloroform (3 to 6 drops on sugar or in water) sometimes useful. 6. Rectal feeding, gastric lavage, laudanum stupes on epigastrium, ether spray, blistering of cervical spine, and ice-bags exert partly psychical effect. 7. Mental therapeutics, in purely neurotic type of vomiting. 8. Massage, electricity, blisters, etc., may help. *Hall.* 119

Whooping-cough. DIAGNOSIS. Edema of the eyelids, especially the lower lids, sometimes appears before the cough and may be of assistance in the diagnosis. *Thursfield.* 97

Wounds. TREATMENT. Nuclein solution found useful to ward off infection in cases of crushed and lacerated hands, burns, varicose ulcers, minor cuts, etc. *Achard and Redfield.* 105

Book Reviews

ELEMENTS OF PHYSIOLOGIC PSYCHOLOGY. A Treatise of the Activities and Nature of the Mind from the Physical and Experimental Points of View. By George Trumbull Ladd, LL.D., Emeritus Professor of Moral Philosophy and Metaphysics, Yale University, and Robert Sessions Woodworth, Ph.D., Professor of Psychology, Columbia University. Illustrated. New York: Charles Scribner's Sons, 1911.

This admirable work justifies a far more extensive and careful review than the space at our disposal permits. The first edition (Prof. G. T. Ladd, author), which appeared nearly twenty-five years ago, was then the first work of its kind in English, and, as stated in the preface to the present edition, with the sole exception of Prof. Wundt's was the *only* one. In its present form it is the joint work of Professors Ladd and Woodworth, much larger than before, and thoroughly rewritten and brought up to present-day needs. It covers the field with thoroughness, clearness, and charm. This presentation of psychology from a masterful and complete point of view will be welcomed by all intelligent physicians who recognize the necessity of becoming familiar with the enormous usefulness in every branch of clinical medicine of a knowledge of the processes of the mind. "The study of the phenomena of consciousness by the method herein proposed necessarily requires some acquaintance with a considerable circuit of sciences which are not usually all alike closely allied." The subject has points of contact with, and a close bearing upon, the whole realm of clinical medicine. It will be far better for physicians to get their own information from a source like this than from the numerous books now appearing and inviting their attention which deal with the problems of the normal mind largely from the standpoint of abnormalities. It is to the last degree important for the physician to acquire his knowledge of psychology from the standpoint of the normal physiologic manifestations. Then and then only can he properly appreciate variants and aberrancies down the whole gamut of neuroses and psychoses to pure psychiatric problems.

The make-up of the book is excellent. It is not overburdened, as are many physiologies, with diverting pictures and conjectures, but constitutes a clean-cut review of the evidence, no part of which could be omitted without loss.—J. M. T.

A MANUAL OF GYNECOLOGY. By Thomas Watts Eden, M.D., C.M. Edin., F.R.C.P. Lond., F.R.C.S. Edin., Obstetric Physician with Charge of Out-patients, and Lecturer on Midwifery and Gynecology, Charing Cross Hospital; Surgeon to In-patients, Chelsea Hospital for Women; Physician to In-patients, Queen Charlotte's Lying-in Hospital; Examiner in Midwifery and Diseases of Women to the University of Oxford, and to the Royal Army Medical College. Octavo of xxii + 632 Pages, with 272 Illustrations. Philadelphia: P. Blakiston's Son & Co., 1911. Cloth, $5.00, net.

This new work on gynecology is intended to provide for students and general practitioners a complete, though not exhaustive, account of the diseases of women. The work opens with the usual section on "Anatomy and Physiology of the Female Genital Organs." This is followed in succession by sections on "Methods of Examination," "Certain Prominent

Gynecological Symptoms" (hemorrhage, discharges, pain, disturbances of micturition, dyspareunia, and sterility), "Disorders of Menstruation," "Morbid Conditions of the Uterus," "of the Ovaries," "of the Fallopian Tubes," "Pelvic Inflammation," "Extra-uterine Gestation," "Morbid Conditions of the Vagina and Vulva," and "Malformations." The remainder of the book—about 100 pages—is taken up with descriptions of the major and minor gynecological operations, the after-treatment of major operations, miscellaneous therapeutical notes, and an index.

The work is in every way an up-to-date presentation of the subject of gynecology. While not presenting any feature differentiating it strikingly from other books on the subject, it is evidently written with the idea of giving the practitioner as much really useful information as its size will allow. The descriptions of pathological conditions and of the symptomatology are clear and to the point. The sections on non-operative forms of treatment, while not occupying much space, deal concisely with those methods which the author has found effective in practice. The use of vaccines, among other measures, is advocated in all obstinate cases of gonorrheal infection. Operative methods are fully dealt with in the special sections set apart for them.

While the text is naturally of interest in that it reflects the British teachings on gynecology, the most attractive feature of this work is its illustrations. Most of them are original photographic reproductions, a number of which occupy a full page. The microphotographs are decidedly above the average. Altogether, we think both the student and practitioner will find this manual very useful.

A Manual of Surgery. For Students and Physicians. By Francis T. Stewart, M.D., Professor of Clinical Surgery, Jefferson Medical College; Surgeon to the Germantown Hospital, Out-patient Surgeon to the Pennsylvania Hospital. Second Edition. Octavo of 682 Pages, with 553 Illustrations. Philadelphia: P. Blakiston's Son & Co., 1911. Cloth, $4.00, net.

The second edition of this work is of somewhat larger size than the first, although the total number of pages is less. The flexible binding has been done away with, so that the volume has now more of the appearance of a full-fledged textbook than in its previous form. The type used is slightly larger—a wise provision, as the type formerly used was a tax on the eyes. The text shows improvements and additions on practically every page. Obsolescent methods have been eliminated, and more than the equivalent of new material inserted. The number of illustrations is increased from 504 to 553; the new ones, several of them colored plates, constitute a valuable addition to the work. The plate opposite page 85, showing gangrene of a finger due to application of phenol, represents with exceptional truth to life the natural condition.

As before, the text is characterized by conciseness and completeness. Paragraph headings are in bold type, important symptoms or signs in italics, thus facilitating rapid reference. By careful weeding out of unessentials the author succeeds in covering the whole field of present-day surgery fully enough to meet the needs of the student and general practitioner. Recent advances in surgery are, for the most part, sufficiently dealt with. Under syphilis, we find an entire page devoted to salvarsan. The reviewer finds no mention of cecostomy, nor of the use of quinine salts in local anesthesia, but these are, of course, relatively unimportant. In general, the book is, as before, a well-planned, admirably written, and very useful manual.

The American Illustrated Medical Dictionary. A New and Complete Dictionary of Terms Used in Medicine, Surgery, Dentistry, Pharmacy, Chemistry, Veterinary Medicine, Nursing, Biology, and Kindred Branches; with New and Elaborate Tables. By W. A. Newman Dorland, A.M., M.D., Member of Committee on Nomenclature and Classification of Diseases of the American Medical Association; Fellow of the American Academy of Medicine. Sixth Edition, Revised and Enlarged. Octavo of 986 Pages, with 323 Illustrations, 119 in Colors. Philadelphia and London: W. B. Saunders Company, 1911. Flexible Leather, $4.50, net, Thumb Indexed, $5.00, net.

The new edition of "Dorland" shows numerous additions and improvements. Through an increase in the number of lines of text to the page, the book contains the equivalent of 173 pages of new matter, or over 7000 new words. Several radically new features have been introduced, viz., the use of initial capital letters for proper names only, full consideration of veterinary and dental terms, a dosage and therapeutic table covering 50 pages, and biographical information concerning men whose names have been associated with pa diseases, anatomical structures, procedures, etc.

As in previous editions, the book is not intended as a condensed encyclopedia, but give a very complete list of words in current use, with their pronunciation, derivation, and definition. Under the more important headings a certain amount of collateral descriptive

matter is included. There are numerous excellent tables, including, besides the usual ones on arteries, muscles, nerves, and micro-organisms, tables of signs, symptoms, tests, stains, methods of treatment, weights and measures, etc. The type is very clear, the work having been completely reset. It is quite evident that much care has been taken to bring the text up to date; many terms only very recently introduced, such as "antianaphylaxis," "hypopituitarism," etc., are included. The book is very easy to consult, owing to the flexible binding. Altogether the new edition of this dictionary will be found satisfactory in every way.

WHAT TO EAT AND WHY. By George Carroll Smith, M.D. Octavo of 310 Pages. Philadelphia and London: W. B. Saunders Company, 1911. Cloth, $2.50, net.

The author of this book has fully carried out his proposed plans. After a brief consideration of the food elements, their composition, general characteristics and uses, and the method of estimating the caloric values of the commoner articles of diet, the reader is instructed in the practical uses of the food elements in many pathologic conditions.

Prefacing each prescribed diet is a careful analytical exposition of the etiology and symptomatology of the ailment for which it is prescribed, followed by a clear and logical discussion of the indications to be met and the kind and proportion of food element best suited to the condition. Following each diet list is a series of practical suggestions enhancing its value and facilitating its use.

The field of diseases and pathologic conditions is not completely covered, but the most important ones are so thoroughly threshed out that the reader cannot go far astray in providing for the others, if he has grasped the fundamental principles clearly enunciated by the author.

The marginal subheads are a great assistance to ready reference. A number of selected recipes and several valuable reference tables close this unique volume.—C. S. W.

THE SEXUAL LIFE OF OUR TIME. By Iwan Bloch, M.D., Physician for Diseases of the Skin and Diseases of the Sexual System in Charlottenburg, Berlin; Author of the "Origin of Syphilis," etc. Translated from the Sixth German Edition by Eden Paul, M.D. London: Rebman Company, 1910.

Many books dealing with the question of sex have appeared, but the one before us makes the largest claim for encyclopedic completeness. The subject is presented from a scientific and judicious standpoint, and the sale, so the publishers tell us, is limited to members of the legal and medical professions. Also, "it is the first time that the subject has been so carefully and fully gone into in the English language." Quite aside from the value which the subject, properly presented, has for the medical profession from a number of practical considerations, it is necessary that the lawyer have access to a scientific statement of the sex laws and variants in criminal and *quasi*criminal matters, probably in matrimonial disputes, and in cases of insanity. In the preface there is incorporated a letter of endorsement from Professor A. Neisser. The subject-matter is set forth with scientific acumen free from the nauseating emotionality so often displayed in works on this subject, and the book will commend itself to thoughtful readers, legal or medical. An interesting feature is a quotation at the beginning of each chapter from some well-known authority. The various quotations appearing in many parts of the text are carefully selected and given at considerable length. Chapter xxxii is entitled, "The Literature of the Sexual Life," and permits of a general survey of what has already attracted attention on this subject.

There is a fairly full Index of Names as well as an Index of Subjects. Altogether the work is one of much value, giving an insight into many perplexing problems which warrant most careful elucidation.—J. M. T.

CONFIDENTIAL CHATS WITH BOYS. CONFIDENTIAL CHATS WITH GIRLS. By W. Lee Howard, M.D. New York: Edward J. Clode, 1911.

A subtitle could with advantage be added to these little books, viz.: "*Confidential Chats with Benighted Parents.*" No better means can be suggested for escaping a vast amount of suffering and domestic confusion than becoming familiar with the subject-matter so plainly and sanely herein set forth by Dr. Howard, who is a master of his subject and of the way to present it. The culpably ignorant, prudish, self-satisfied mother is an enemy to the race. The fatuous or careless father is a good second in blameworthiness. May every parent in the United States read these good little books!—J. M. T.

The General Field

Conducted by A. G. CRANDALL

Nutrition the Main Consideration with Children

The high cost of living presents many temptations not only to dealers in food supplies, but to housekeepers as well.

The limited purchasing power of a dollar makes the cut-rate grocer's announcements very enticing. The throngs of women with market baskets make the dealer eager to somehow, in some way, procure goods salable at prices which will tempt the owner of the slender pocketbook. There can be no doubt that the lowered vitality of some family groups of young children bears an intimate relation to the cut-rate grocery stores.

With vast areas of farm lands but poorly tilled (if tilled at all) because of the lack of reliable farm laborers, the present conditions seem likely to become worse instead of better, and the question of the proper nutrition of the young children of poor families becomes progressively acute.

A vast army of retail dealers in food supplies are desirous of conducting an honorable business, but suffer from the competition of others less scrupulous. Obviously the best method by which to protect the customer is to hunt down the dishonest retailer and either induce him to permanently mend his ways, usually impossible, or drive him out of business. There is no greater menace to the public welfare than the purveyor of overripe eggs, stale poultry, and dirty, substandard milk; but the vender of cheap candies in close proximity to the public schools should be also subject to systematic supervision.

In the light of what is now known of natural immunity to the invasion of disease germs, the question of the suitable nutrition of young children is more than a family affair: it is a question of paramount national importance bearing reference to the usefulness of millions of future citizens.

Virtue Its Own Reward and Often the Only One

For sixteen years Dr. Alvah H. Doty, admired by hosts of fairly intelligent citizens, has stood on guard to prevent, with the assimilation of millions of desirable immigrants to this country, the further assimilation of the diseases especially indigenous to the countries emigrated from.

During the whole period of incumbency of Dr. Doty as Health Officer for the port of New York, no epidemic traceable to this influx of aliens has occurred in a city of five millions.

This is a record of which any man could reasonably be proud, and one which might well console a physician of high professional attainments and executive abilities for having spent the best years of his prime with a very moderate financial return in the way of salary.

Yet, it seems that this record carries little weight when political considerations are brought to bear on the case. Because of a fantastic tale of a midnight revel of subordinates, Governor Dix, of New York, demanded Dr. Doty's resignation, arousing a storm of protest calculated to disconcert even the most stubborn executive.

This case seems to preser
parallel to the recent attempt
the dismissal of Dr. Wiley. The ap-

pointment of Dr. Doty's successor makes a less happy outcome, however. The endorsement by Governor Dix of the absurd charges against Dr. Doty may be remembered as long as were the patriotic utterances of an earlier Governor Dix in the days of the Civil War.

By-products

Most of us have until recently supposed the meat-packing business was a profitable enterprise, but it seems to be otherwise. The retailing of rich, juicy steaks at 30 cents per pound is merely another instance of the philanthropy which seems to envelop the multimillionaire like a mist. That which keeps the packing industries from bankruptcy and provides the basis for a commercial rating Aaa 1 is the by-products.

A steer's horns are apparently worth their weight in gold, not to mention the hair and hoofs.

The coal barons hardly get out even selling commercial coal, but by the aid of the coal-tar products they are able to do fairly well and have incidentally given the undertaking business many a quiet boost through the misguided enthusiasm of physicians who prescribed the aforesaid products not wisely, but too much.

The clergyman sarcastically compares his meager salary with the prevailing price of eggs; all the world pities more than helps him. But now and then there is a man of the cloth who, possessing the advertising instinct, sees the possibilities of the by-product, and runaway couples eager to escape lives of freedom from responsibility flock to him in droves.

All that is required to make the average physician wealthy is the development of some by-product. Certain physicians proceeding enthusiastically on this theory have made two pairs of spectacles sprout in the place of one, and what was to them a wilderness now blossoms like the rose. All should study the by-product, for thereby lies the path to wealth.

The Muckraker

It is said to be within the capacity of almost any one to criticise. The man who has failed to make good is almost sure to see the vital mistakes of those who have succeeded. To judge by the writers of muckraking articles, a large number of the almost successful are engaged in journalism.

It seems unfortunate that the enormous conversion of our spruce forests into paper pulp should, to such an extent, be designed for the syndicating of the criticism of men prominent in the public eye when the work could be done equally well at the crossroads grocery store or at the corner saloon.

A peevish disposition with associations calculated to depress the spirits is said to predispose one to neurasthenia. If so the muckraker newspaper habit is a dangerous one, surely calculated to produce a peevish disposition and dissatisfaction with everything in general. Washington and Lincoln are said to have been maligned even worse than Roosevelt, Taft, or Wilson.

The doctor has heretofore found a safe refuge from the muckraker in his medical exchanges. Secure in his easy chair he could contemplate with placid contentment harrowing narratives of rabies, delirium tremens, or hystero-epilepsy. But lately he finds therein something worse to read about. He finds that the muckraker has invaded even the primeval peacefulness of the medical journal, and that the analysis of motives

has begun. Who can blame him, therefore, if he lets the muckraking medical journal remain unread in its wrapper?

An Unwise Use of the Steam Roller

In this exceedingly practical era it is necessary that every enterprise be conducted on strict business principles. And nowhere is this recognized more than in politics. A man now conspicuous in official life at Washington inadvertently enriched the political vocabulary with a new term which aptly described the business-like methods of conducting a political convention. He was said to have run the steam roller promptly over all who objected to the proceedings.

Steam-roller methods, however, should not be applied to sanitarians fortified with scientific facts. People who object to going under the steam roller may not be very desirable from the standpoint of those who can muster the most votes, but they should not be ignored altogether, as they sometimes produce very unpleasant situations.

Coatesville, Pa., made odious by a recent lynching, is again in the limelight. This time it is an epidemic of typhoid fever which seems to have been due strictly to steam-roller politics.

When warned by the State Health Officer that conditions affecting the city water supply promised an epidemic unless rectified, certain members of the city councils were eager to apply the remedy. Being regarded by the controlling majority of councilmen as chronic kickers, always trying to make trouble, the steam roller was promptly utilized. The result is to place the autocratic majority in an exceedingly unpleasant position with an appalling typhoid death rate directly traceable to the steam roller.

The farcical proceedings associated with the recent lynching trials indicate a very stolid state of public opinion in Coatesville, but it is possible that 200 easily preventable cases of typhoid, with numerous deaths, may convince the voters of that city that factional politics and steam-roller methods have their drawbacks where municipal health is involved.

Universal Peace

Those estimable persons who are recommending the disarmament of nations are doubtless sincere, or think they are. But at present there is hardly any policy so unprofitable to advocate as universal peace.

The agriculturist, the raiser of fruit, and the doctor are all examples of a policy of war without quarter. Those who indignantly rebel against the high price of potatoes should bear in mind the constant warfare necessary to annihilate the potato bug. The apple raiser must devote a great deal of time and expenditure to the fight against insect pests.

Not only does the wheat raiser give up a large toll to insects, but another one is demanded by rats. Naturally, he declares war. The doctor fights germs; the housewife fights flies and roaches.

Everywhere it is war to the knife and often war with the knife.

The citizen engaged in mercantile pursuits fights the trusts. Churches are supposed to carry on unremitting warfare with the devil, and great statesmen of various political faiths are busily engaged in preventing the low-down politicians of opposing parties from plunging a great nation into ruin.

Altogether it would seem to be a great calamity not to be able under especially exasperating circumstances to go on the warpath and mix things up.

Universal Peace! Why discuss that which is a million years in the future?

Contagious and Hereditary

Numerous cases of appendicitis in the past few weeks have occurred under circumstances which, in the Dark Ages at least, would have suggested that this disorder was both contagious and hereditary.

Two very prominent surgeons of the West who have performed many operations for appendicitis have recently gone under the knife for the same condition. One of these was Dr. Charles H. Mayo, of Rochester, Minn. It seems, indeed, to be a fact that the abdominal surgeon is quite prone to be a shining mark for the disease.

An infant only a few weeks old recently was operated upon successfully for appendicitis. Its family history shows the interesting fact that the father of the child had but a short time ago also undergone an operation for appendicitis. A consoling theory based upon well-known principles of anthropology is that extirpation of the appendix systematically through a few succeeding generations is likely to make Nature forget to insert any appendix in later descendants.

Honest Champions Needed

Considering the family doctor of normal instincts and with the usual tendency to become a ready victim to the appeal of poverty, and to render his valuable services to a very considerable extent where there is no reasonable hope of financial return, one is irresistibly led to believe that at the present era the doctor, considered as a type, is about the nearest approach to the real, genuine missionary who exists.

Now, it must not be claimed by even the most enthusiastic admirers of the medical fraternity that he does all this missionary work without a little quiet grumbling to himself. It is certainly poor business as compared with the material standards set up on every side, whereby money is king and everything else of secondary importance. But although he may grumble, he cannot resist the appeal of distress.

There exists at the present time a very unfortunate antagonism between those who employ labor on an extensive plan and their employés. Neither employer nor employés understand each other. Those who are selected by organized labor to lead them have in nearly every instance proved, to speak even in the most charitable terms, incapable. There is probably no class of educated men which is in a better position to understand the conditions affecting both sides of the labor contention than the doctor, who not only comes in contact with the privations of the labor classes, but who can appreciate the tremendous nervous and physical strain under which the average employer is constantly working—a strain which might well cause him to envy the more simple existence and peace of mind of many of his employés.

The logic of the foregoing is irresistible. The natural normal champion of organized labor is the doctor. Who will volunteer?

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Original Articles

GRAPHIC METHODS AND INSTRUMENTS IN THE DIAGNOSIS OF CARDIAC AFFECTIONS.

BY THOMAS E. SATTERTHWAITE, M.D.,
NEW YORK, N. Y.

GRAPHIC methods are used in medicine chiefly to record tracings of cardiovascular, respiratory, and muscular movements.

Polygraphy is a method of recording two or more tracings simultaneously on kymographic paper actuated by a motive force, usually clockwork or electricity. The paper is attached to the surface of a metal drum, or sometimes to two drums. Of the tracings one may be made to mark the intervals of time in seconds or fractions of seconds. Kymographic paper is usually white with a smoked surface, the tracings made by the pen-arm or stylet revealing the paper and so appearing as white. This method records the precise length of a cardiac cycle, the several events being registered in waves or depressions. By this means a number of features of the circulation that were formerly unknown to us are disclosed. The tracings are truthful records of events, subject, however, to errors produced by defective instruments, sometimes by artefacts that cannot always be avoided, and also by lack of skill on the part of the operator. So, too, where there is an unusual combination of cardiac arrhythmias, even an expert may be in doubt as to the proper interpretation of each wave, wavelet, or depression.

But despite these drawbacks, tracings are fairly comprehensible registers of the various cardiovascular activities. In fact, polygraphy can be used effectively to determine the action of drugs, food, and drink on the human organism, and also such other therapeutic agencies as baths, muscular exercises, massage, and electricity. As will be shown, it is also a material aid in the diagnosis of cardiac disease.

In arrhythmias it has led to a new classification. At the present time polygraphy is the most reliable guide we have in determining abnormal car-

diac conditions. It is therefore helpful in indicating appropriate lines of treatment.

But the sphygmograph alone is of comparatively little value, because there has never been any close agreement among physiologists and clinicians as to all the characteristics of a normal sphygmogram, nor as to distinctive curves in the various forms of valvular disease. This conclusion I reached as early as 1882, when I took the matter up at the Presbyterian Hospital of New York City. Though at that time most of my colleagues were of the opinion reached by Rosenstein in 1876, that no differentiation in valvular diseases can be made by any sphygmograph, a single one of them clung to the notion that aortic regurgitation had a distinctive style of curve. My experience showed me at that time that even on this point such an opinion was erroneous. Sphygmograms are lacking in accuracy because the personal equation cannot be eliminated. To secure a good tracing the exploratory button or base must be placed directly over the radial, so as to press it against the bone. This is not easy. Besides, a certain, but indeterminate degree of pressure must be employed, and, inasmuch as it is impossible to adjust the button precisely in the same spot or to use exactly the same amount of pressure in each instance, the tracings will vary in successive tests. Indeed, there is no such thing as a standard normal sphygmogram. Age, the degree of vitality, and sex are some of the factors that cause variations in the sphygmogram in health. Similarly, there can never be any fixed standard for the tracings of the various diseases of the cardiovascular system. As each individual differs from another in health, so, even in the same disease, and in successive examinations, there are differences which will be recorded in the sphygmogram. One has but to compare the several tracings in health and in valvular diseases as given by Eichhorst, Colbeck, Mahomed, Strümpell, Fagge, Michael Foster, and others to assure himself that my statement is substantiated by their experience. Even in a single examination, the tracings will show appreciable differences, as will be shown in Fig. 2. The same statements are applicable to the cardiogram, where the variations are even further emphasized.

Yet, the sphygmograph has its uses. In fact, we cannot well dispense with it, even though its field is comparatively narrow. It may be relied on to give the frequency of the pulse, when the finger is unable to count it. It will give a rough record of some cardiac arrhythmias. It is competent, moreover, to demonstrate auricular fibrillation without any other appliance, if we rely on recent experimental researches.[1] But it will not indicate the grade and quality of arterial tension as well as the trained finger. As a key, however, to the interpretation of the jugular pulse, its tracings are most important, and in simultaneous records of the jugular, carotid, and radial pulses and the apex beat it affords a better criterion than the carotid, because it is more easily isolated from the surrounding tissues.

In the field of polygraphy, we must, for the present at least, be satisfied if its records give us practical assistance, even if they differ. Their accuracy

[1] Lewis,

is comparative. The case is much the same as that of the sextant which the captain of a ship uses to find his position when out of sight of land. He cannot, except by the merest chance, determine the position of his ship, because he has no stationary mark to assist him, but he nevertheless usually locates his position on the chart with a sufficient degree of accuracy for practical purposes. The analogy holds good with many of the instruments in use in medical practice. They assist us materially in framing our diagnoses. Of all the graphic instruments the electrocardiograph is the most accurate, but the character of its curves varies according to the so-called "leads" that are used,—a point that is now generally recognized.

In Fig. 1 is shown the scheme of a normal sphygmogram in a healthy man with a pulse of 72. The space *E* marks the period of ventricular systole, which in this instance occupies about $^{3}/_{10}$ second. This is the sphygmic, or pulse, period. The space *G* marks the ventricular diastole, and occupies about $^{2}/_{10}$ second. The nearly vertical upstrokes *PP* are known as the percussion waves; the tidal waves *TT* follow. At *DD* are seen the dicrotic waves, while

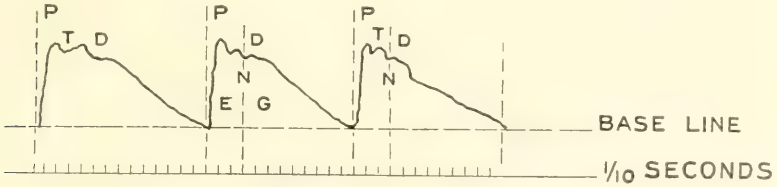

Fig. 1.—Schematic plan of a normal sphygmogram.

NN represent the dicrotic notches. An imaginary line runs horizontally through the lowest points of the upstrokes, and is known as the base line, while under it the intervals of time are marked by the chronograph in seconds and fractions of a second. The waves, wavelets, and notches and their time relations to one another are of great importance in deciphering the significance of a jugular tracing such as is seen in Fig. 2.

As far as possible, both the numbers and letters used in these illustrations will be those of the English system, as used by Lewis. Unfortunately, there has been no uniform system of notation, and much confusion has resulted. The accepted intervals of time in Figs. 1 and 2 are those of Mackenzie, who makes the cycle occupy $^{1200}/_{1000}$ seconds, while Michael Foster puts it at $^{1130}/_{1000}$ seconds. The latter observer puts the duration of ventricular systole at $^{451}/_{1000}$ and the duration of ventricular diastole at $^{679}/_{1000}$ second. Lewis puts the length of the cycle at $^{1010}/_{1000}$ seconds, the ventricular systole at $^{540}/_{1000}$ second, and the ventricular diastole at $^{470}/_{1000}$ second. Of course, the length of the cycle varies with the frequency of the pulse. If a pulse of 72 has a cyclic length of $^{12}/_{10}$ seconds, a pulse of 60 will have a cyclic length of $^{10}/_{10}$, or 1, second. More than this, and as a corollary to what has already been said, there is no absolutely fixed relation in time between the periods of ventricular systole and diastole of either ventricle, carotid, or

radial, as may be seen by measuring these intervals in Fig. 2 with a pair of dividers.

In Fig. 2 the carotid wave shows a nearly vertical upstroke, due to the sudden rise of blood-pressure caused by ventricular systole. It is followed by a long and irregular downstroke, due to the gradual fall of blood-pressure. The first or tidal wave is due to secondary contraction and expansion of the artery immediately after its primary systolic contraction. The second wave, called the recoil or dicrotic wave, is caused by the recoil of the blood column due to the closure of the aortic valves. The carotid upstroke precedes the radial upstroke from $\frac{1}{10}$ to $\frac{2}{10}$ second.

In the jugular pulse, A is the auricular wave, C the carotid wave, and V the ventricular wave; X is the carotid depression and X' the auricular depression, while Y is the ventricular depression.

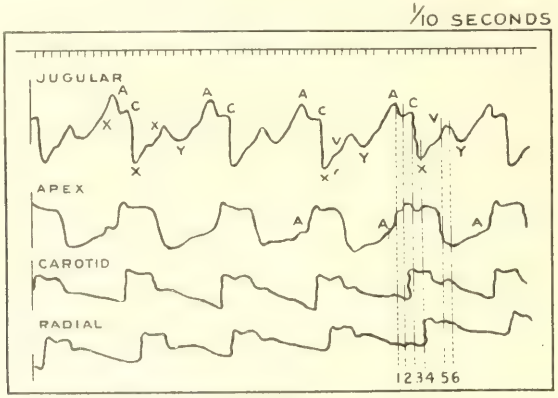

Fig. 2. Simultaneous tracings of jugular, radial, and carotid pulses and apex beat. An adaptation of a Mackenzie polygram in a healthy man with a pulse of 72, where the length of the cardiac cycle is $1\frac{2}{10}$ seconds.

The numerals 1-6 refer to contemporaneous events in the four tracings, so that their effects can be plainly observed in each case. At 1, auricular systole is seen in the jugular. At 2, ventricular systole begins in the ventricles. At 3, the aortic and pulmonary valves open. At 4, the radial is seen to be contracting about $1\frac{1}{2}$ seconds after the carotid. At 5, the aortic and pulmonary valves are closing. Between 1 and 3 is the interval between the beginning of auricular systole and the opening of the aortic valves. It is known as the A-C interval.

Apart from the two normal oscillations of the downstroke, as seen in the radial and carotid, there are other miniature waves, some of which are referable to the inherent elasticity of the arterial walls, and some to instrumental or other causes, such as auricular fibrillation. It will be seen that the apex of the normal arterial tracing (Fig. 1), or the angle between the upstroke and downstroke, is nearly that of a right angle, while of the two minor downstroke waves the recoil is more conspicuous than the tidal. This angle in many cases is quite acute, as may be seen in Fig. 1.

The cardiogram, shown by the tracing of the apex of the ventricle in Fig. 2, consists of a nearly perpendicular upstroke, a nearly horizontal line, the systolic plateau (3-5), and an oblique downstroke (5-6). The upstroke marks the beginning of ventricular systole, and may be preceded by a minor wave (*A*) due to systole of the left auricle. Ordinarily the cardiogram fails to show this auricular undulation, but faint indications of it may be seen in the radial tracing of this polygram. It is usually well shown in the electrocardiogram. The sloping line of the apex tracing (5-6) is often rippled by other subsidiary waves. Chronologically, the systolic plateau corresponds to the impact of the heart against the parietes during ventricular systole, and from this summit the downstroke falls with moderate obliquity to the base line. The wave following immediately after the downstroke (5) coincides with ventricular diastole.

The phlebogram, as illustrated by the jugular tracing in Fig. 2, is composed of three distinct waves. The first of these, the auricular, or *A*, wave, is presystolic in time, being coincident with the contraction of the auricles. The second wave (*C*), commonly called the carotid, is to be attributed to the communicated impact of the carotid artery. The third wave (*V*) is known as the ventricular; it corresponds in time with the dicrotic wave in the radial. The notch after the *A* wave marks relaxation of the auricle; that after the *C* wave denotes auricular diastole; that succeeding the *V* wave indicates ventricular diastole and the passive period of the cardiac cycle. The *A*-*C* interval is the interval between the beginning of the auricular systole and the opening of the aortic valves, typified by the carotid waves in the tracings of the jugular pulse. (Figs. 2, 4, and 5.) This *A*-*C* interval is in health about $\frac{1}{5}$ second.

When there is the ventricular type of jugular pulse, the jugular pulse corresponds in time to the systole of the ventricles, *i.e.*, venous systole and venous diastole are contemporaneous with ventricular systole and diastole. There is in such cases a change in the point of origin of the cardiac stimulus; indeed, where auricles and ventricles beat simultaneously the impulse probably originates in the ventricle. (See Fig. 6.) Contrary to opinions that have heretofore been expressed, the venous pulse can usually be found and registered, though the method is not always easy (Barringer). Anything that produces increased venous pressure, such as intrathoracic tumors or abdominal pressure, is likely to cause prominence of veins such as the jugular. The causes, however, are not all known.

Fig. 3, adapted from Lewis, gives a schematic representation of the waves and depressions of the carotid, aortic, ventricular, auricular, and jugular beats, as compared with the electrographic tracing. The several curves are a compound made up of many tracings in individuals whose pulse is set at 60. The length of the cycle is set at 1 second. It will be noted that in the auricular and jugular tracings there is much variation as to the nature of the waves; also that in the electrocardiogram both the waves *R* and *T* anticipate in time the auricular and ventricular waves as seen in the ventricular tracing. It is supposed that the electrogram registers the contractions

of the papillary muscles, which precede those of the main part of the heart wall.

Now, the cardiogram, which is the record of the apex beat, taken either immediately over the seat of the visible impulse, in the fifth interspace or in its vicinity, in the second, third, or fourth space, or in the epigastrium, helps us also to interpret the venous pulse tracing. The cardiogram can, besides, indicate whether the left or the right ventricle makes the impact, for when the right apex makes the impact the tracing is inverted.

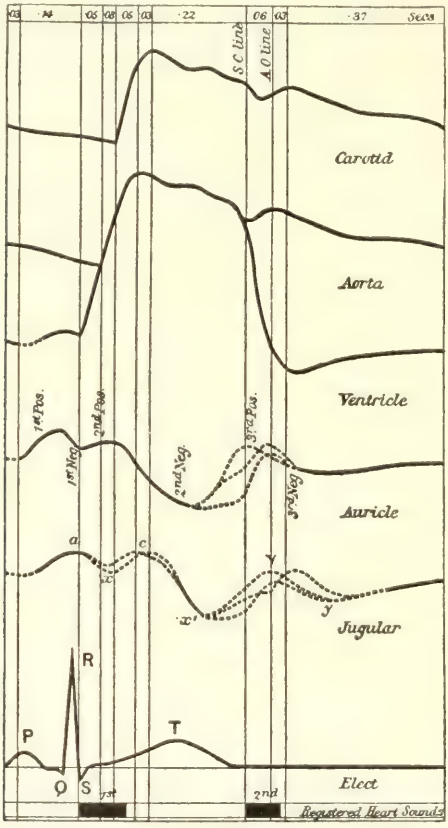

Fig. 3.—Diagrammatic representation of tracings taken simultaneously.

This illustration gives a fairly correct view of the contemporaneous happenings in the different cycles, though, as has already been said, there is such a variation in any individual in the length of the cycle and in the prominence and position of the waves and depressions that no one of the tracings can be considered as more than approximately correct.

When the apex beat is not clearly felt, a tracing of it may sometimes be obtained in the epigastrium, but it may be necessary to put the patient in the sitting position. If the beat is of the right apex, the cardiogram will be inverted. It will be seen, therefore, that records may be made of the action of

both right and left ventricles; the phlebogram, however, gives the record of only the right ventricle and right auricle, while the sphygmogram gives the record of both the left ventricle and left auricle. Polygraphic methods thus give a record of events in the four chambers of the heart.

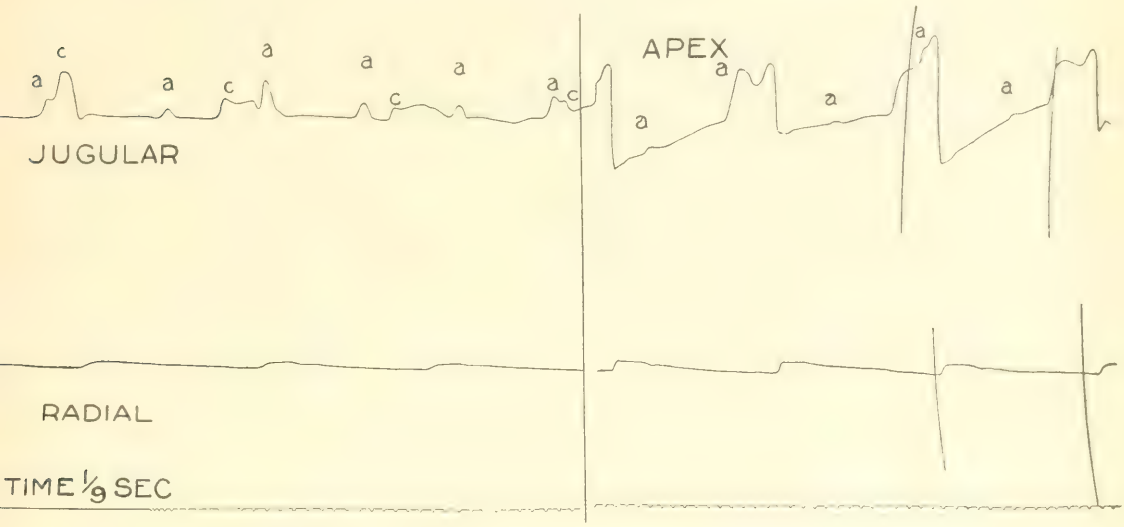

Fig. 4.—In this illustration is seen on the right the tracing of the apex (left ventricle). The waves at *a* denote the impression recorded on the tracing by the contraction of the auricles. The case is one of complete heart block, the ventricles and auricles operating quite independently of each other. This tracing was taken immediately over the point of cardiac impact by Dr. T. B. Barringer.

In Fig. 5, a tracing taken by the author, it will be seen that no two of the successive apex beats have the same length. This is, therefore, according to the criterion of Lewis, an example of auricular fibrillation, the so-called "nodal arrhythmia" of Mackenzie, or the permanently irregular pulse of Hering. It may occur with the frequent pulse also, when, in my experience, the prognosis is more grave. It will also be noted that in 12 seconds only one-half the beats have any considerable degree of force. In the jugular tracing, which is not shown, auricular systole was contemporaneous with the apex beat, showing the ventricular type of auricular systole.

Fig. 5.—Auricular fibrillation with partial heart block in a male with Adams-Stokes disease. Pulse 30. Time markings in seconds and tenths of seconds.

In Fig. 6, taken from Mackenzie, is seen a radial tracing above, while below is a combined jugular and carotid tracing, the carotid being the dominant type; the impulse of the jugular indicating auricular contraction is trans-

mitted to the carotid in the wave *a*. Here for every 6 beats of the carotid there are 11 of the auricle; the ratio of auricular to ventricular pulsation is therefore as 11 is to 6.

In interpreting the jugular pulse we should remember that sometimes the carotid is mistaken for the jugular, so that the two are traced jointly, though

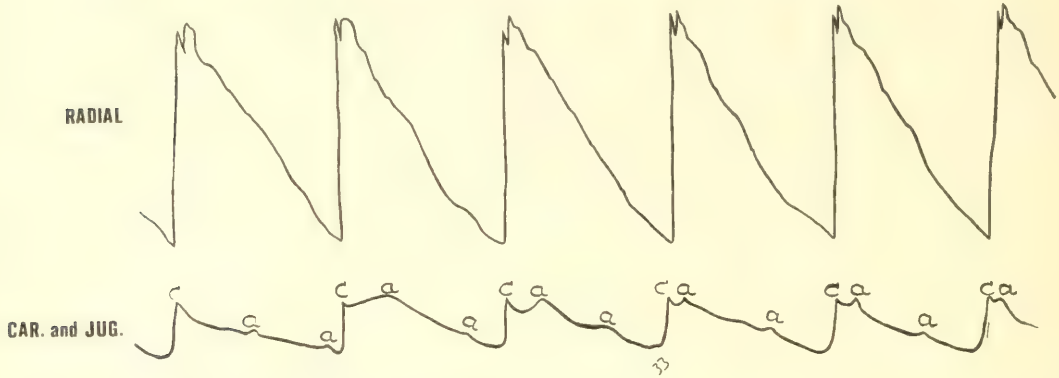

Fig. 6.—Complete auriculoventricular dissociation. (Heart block.)

in this case the carotid gives the dominating curves. If the radial pulse is small, and there is a pulsating vessel in the neck, it is almost necessarily the jugular. But the simplest way for a novice is to select someone who has marked prominence and fullness of the jugular, and learn to make tracings with him as a model. Examination is best made when the patient is lying down,

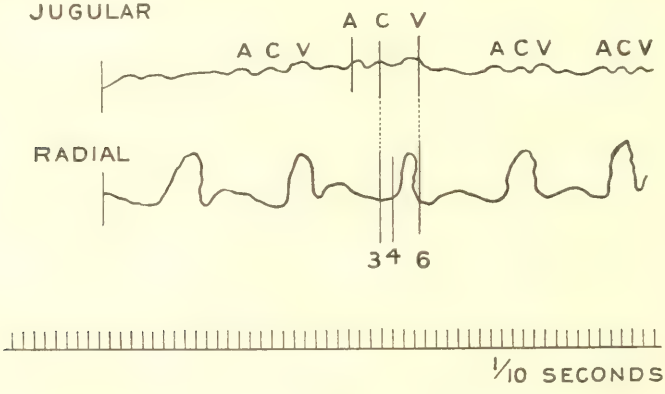

Fig. 7.

when the pulsation is better seen. Still, as a rule it is not visible, the vein being covered by the skin, the sternomastoid, and more or less fat-tissue.

The method of analyzing the jugular tracing in a normal radial pulse of 72 is as follows (Fig. 7): Make a downstroke at right angles to the time-marking line, at the beginning of the radial upstroke marked 4. Then draw another vertical line $\frac{1}{10}$ second or so in advance of it, so as to pass through

the top of the middle jugular wave of the three in series. The carotid wave, as we have seen, anticipates the radial by $\frac{1}{10}$ to $\frac{2}{10}$ second, and corresponds to the middle wave; in fact, it makes this wave. It is, accordingly, to be marked *C*. Now measure the distance from the beginning of the tracing to 3. Measure a like distance off in the jugular, and it should strike the top of the middle wave. This is a corroborative indication that the letter *C* is correctly placed. But the auricular systole occurs about $\frac{2}{10}$ second earlier. Draw a vertical line about $\frac{2}{10}$ second further in advance; let the line pass through the crest of the wave, and the wave of auricular systole is thereby located. Mark it *A*.

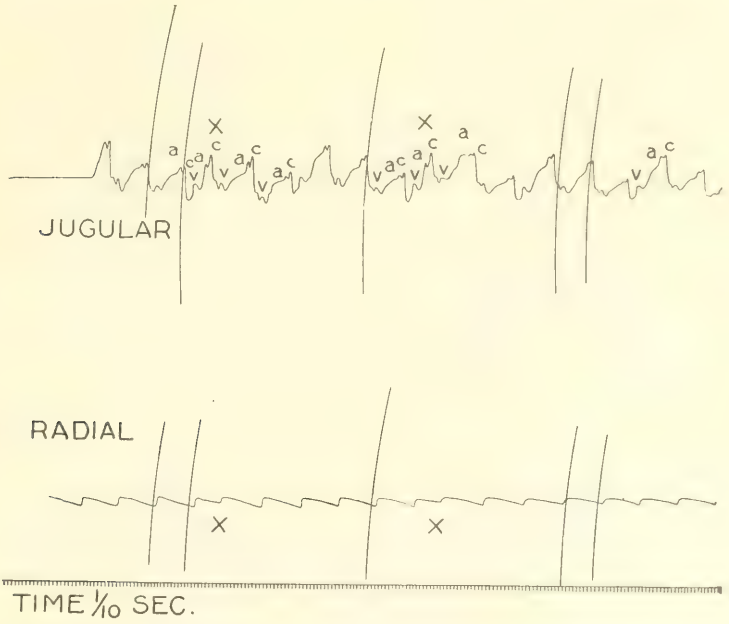

Fig. 8.—Extrasystolic arrhythmia of the auricular type. The letter *a* indicates auricular contraction of the right auricle; *c* the carotid wave, and *v* the ventricular wave. At × are extrasystoles of the auricular type. Tracings taken by T. B. Barringer.

The dicrotic notch, which corresponds approximately to the top of the third jugular wave, marks the closure of the tricuspid and mitral valves. Mark this point with the letter *V*.

These three letters are the keys to the interpretation of the jugular pulse; the letters indicating the depressions as shown in Fig. 3 can be added if need be.

In Fig. 8 the sign × denotes extrasystoles. As already stated, the record of the venous pulse discloses more features than a record of the arterial pulse.

The ordinary polygraphic machine is fitted with one or more delicate levers, each tipped with a stylet, and attached to a tambour with rubber membrane connected by a rubber tube with a receiver, which, when placed over the pulsating area, transmits the undulations to its stylet. The lever, with

or without the tip or stylet, forms the so-called pen-arm, and is made to rest lightly on the surface of the kymographic paper, which is usually smoked. As the paper is actuated by clockwork, or in the laboratory by an electric motor, it moves at uniform speed, while the oscillations of the pen-arm on the carbonized film make the graphic tracing.

In order to interpret the several tracings of the polygram, a chronograph, or time-marker, is necessary. This also is actuated by clockwork or electricity. After the polygram has been made, it is to be suitably labeled with the name of the patient, the date, and the locality. Afterward, the numerals and letters required for purposes of interpretation are inserted in their appropriate places. Next, the paper is carefully removed from the drum or drums, and immersed in a solution either of shellac and alcohol or of benzoinum and

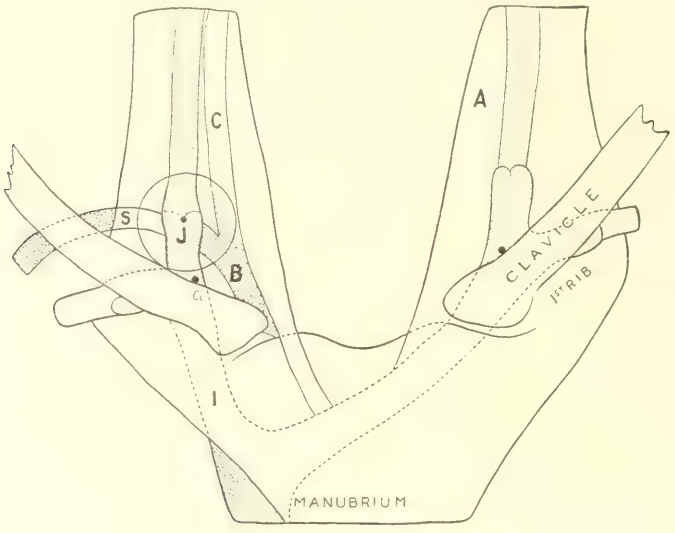

Fig. 9.

alcohol (1 oz. to 10 oz.), after which it is hung up to dry, and then laid on a flat surface, protected from the dust. This is the best method to follow, as unless it is spread out flat before becoming fully dry the paper is apt to curl up in drying.

Mackenzie recommends two instruments for clinical work: the clinical polygraph and the ink-writing polygraph. Both are portable. In hospital and laboratory work, larger and more complete instruments are necessary; these are, of course, more accurate, but their size and weight make them too bulky for ordinary clinical work.

When the tracing is about to be made, the patient should, as a rule, be placed in a comfortable reclining or horizontal position, with the head bent slightly on the chest. Then the operator marks with a dermographic pencil the site of the right radial artery, just above the styloid process of the radius. The mark should be placed where the vessel is most prominent. The wrist is put at rest in an easy position, and the pad of the machine applied to the

spot marked. The rubber tube is then attached to the lever, the tip of the pen-arm is approximated to the surface of the smoked paper, and the spring connected with the lever is so regulated as to get the required amplitude for the excursions of the pen-arm.

To get the jugular pulse, apply the receiver,—which is a brass cup, perforated with a minute hole to allow the escape of air when applied,—over the jugular bulb on the right side, at the spot (J) indicated in Fig. 9 (after Mackenzie).

Occasionally it may be better to apply the receiver on the left side or higher up. The other end of the tube should be attached to the pen-arm and approximated to the kymographic paper.

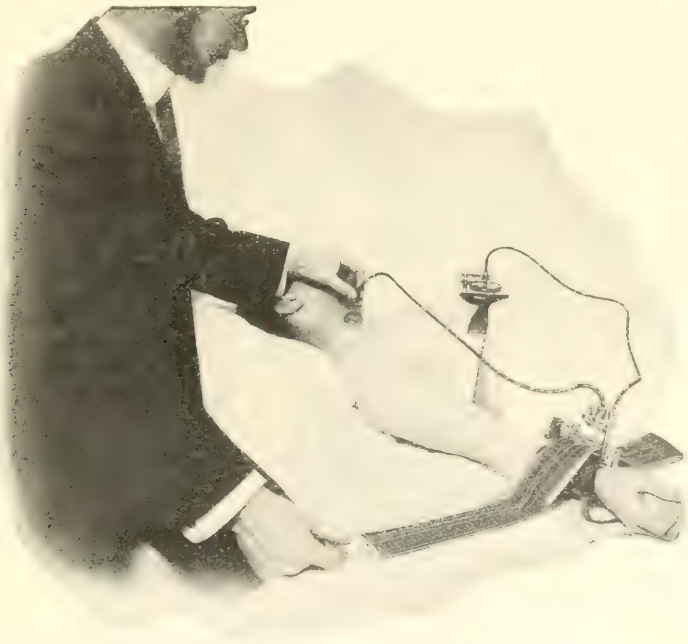

Fig. 10.

In getting the liver pulse, a special receiver is required. It should be large and oblong. After the knees of the patient have been drawn up, it is applied to the surface of the liver, being pushed up under the free border of the ribs. To this receiver one end of the rubber tube is attached and the other to the pen-arm and tambour.

A somewhat similar receiver is placed over the apex of the heart, where it is bound down by a circular band (Fig. 10). All of the pen-arms are firmly attached to a vertical metal support, which is firmly clamped to a table, bracket, or some other object that is immovable.

To record the carotid pulse, the receiver is placed at about the level of the thyroid cartilage, or at the level of the hyoid bone, on the right side. The chin should be elevated and the head turned to the left, in order that the carotid may be easily reached by the receiver.

It was thought that the venous pulse could not always be taken, but Dr. T. B. Barringer, of New York, was able to take it in 25 successive young persons with normal hearts.[2] The venous pulsations may best be seen in the neck, when the patient is lying down and the receiver is applied about an inch and a half from the sternoclavicular joint, just above the clavicle, over the site of the jugular bulb. But the right sternomastoid must be in a state of relaxation, which necessitates such a position of the head that the tension of the muscle is overcome. If the respiratory movements are too prominent in the

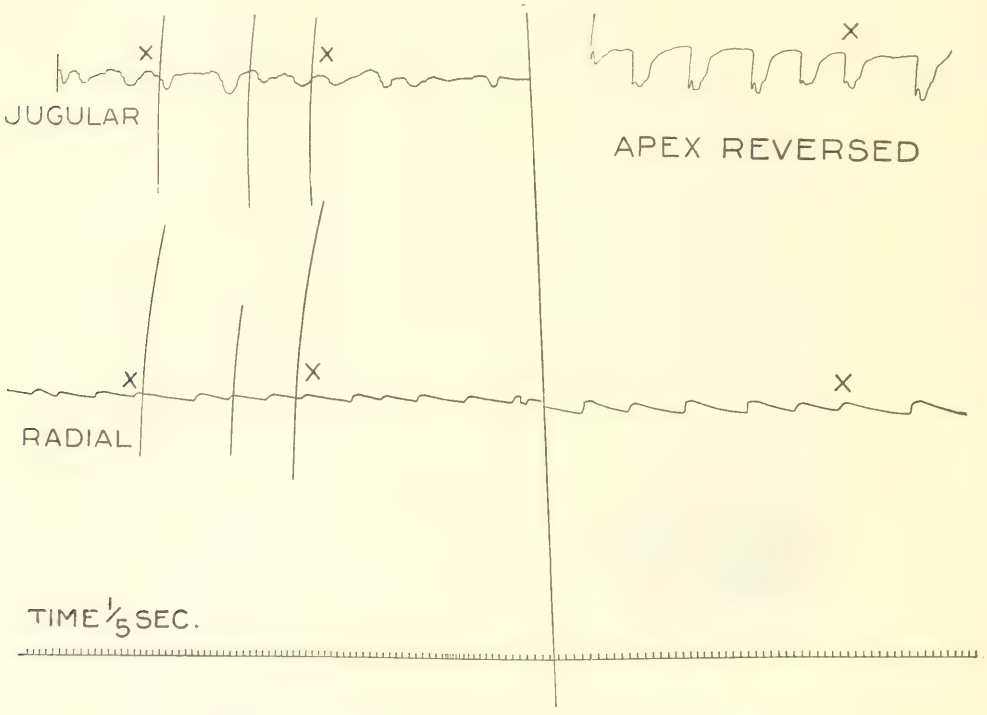

Fig. 11.—Reversed apex beat. By T. B. Barringer.

jugular tracing, it will be advisable to have the breathing stopped for a while, so as to eliminate this feature.

If, in taking the record of the apex beat, the receiver is placed on the inner side of the apex beat, we may get the record of the impulse derived from the right ventricle, which will make an inverted tracing, as shown in Fig. 11.

In the obese, and in women with pendulous breasts, there may be no visible apex beat. In pronounced myocardial diseases it is apt to be absent. Whenever the cap or receiver is used, the finger must cover the minute air hole while the tracing is being made, so that the full force of the column of air will be transmitted to the tambour.

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[2] Dr. Barringer made them run up three flights of stairs, and then used a rather shallow receiver of a special type.

In taking respiratory movements such as are seen in Fig. 12, bind an ordinary rubber bag to the chest, attaching to it a tube and tambour; the respiratory movements will be traced on the moving smoked paper.

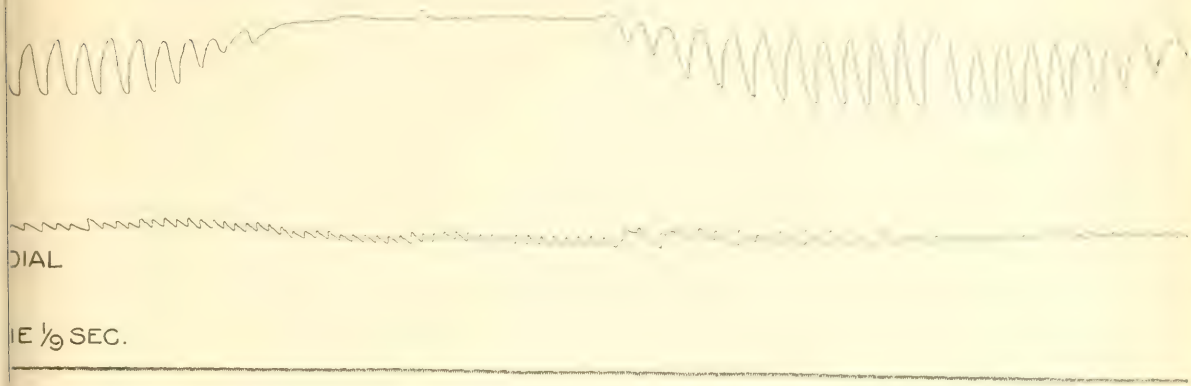

Fig. 12.—Cheyne-Stokes respiration. By Barringer.

The Jaquet polygraphic machine, known as the sphygmocardiograph, is excellent for clinical work, though its cost in this country, duty paid (Arthur H. Thomas Company, Philadelphia), is $130. This instrument is compact,

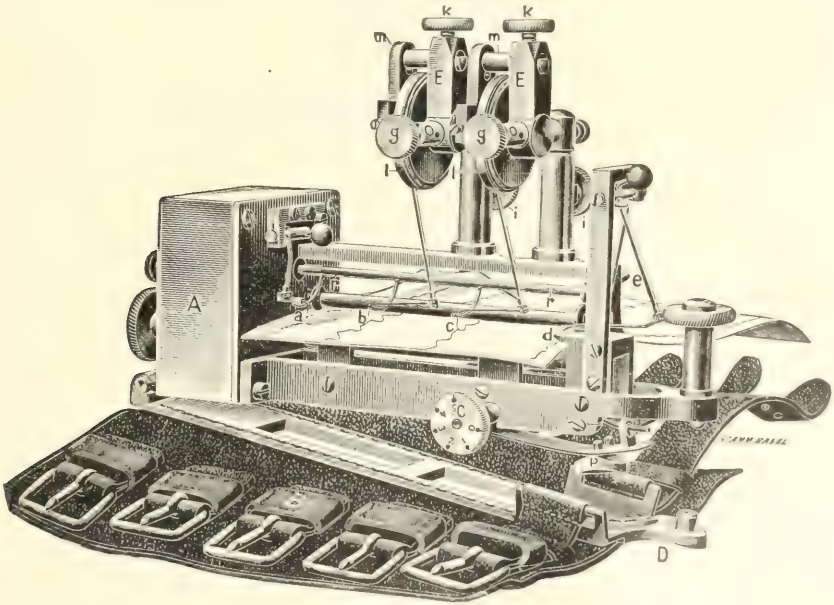

Fig. 13.—Jaquet's sphygmocardiograph.

comparatively easy to operate, and capable of registering three tracings. Though these are miniatures of the tracings made by large laboratory kymographs, they give the prominent details.

Jaquet's sphygmocardiograph (Fig. 13) is provided with a small metal plate which rests on the subject's radial artery, and is attached to a lever system carrying at its free end a delicate stylet for registering the movements of the radial pulse. A second stylet and lever system plays upon a tambour, and leads by a rubber tube to a special receiver designed for the cardiac apex or other thoracic pulsations, which is held in place by a chest strap. A third registering mechanism of similar construction communicates with a cup-shaped receiver used for transmitting the jugular impulse; a fourth, actuated by separate clockwork, marks the time. When, after adjustment, the three stylets rise and fall with proper amplitude, indicating that the different undulations will be satisfactorily registered, the operator starts the chronograph and sets the strip in motion, adjusting it to run its whole length, while an assistant catches the paper as it passes from the rolls and guide wheels, so that it emerges without hitch from the instrument.

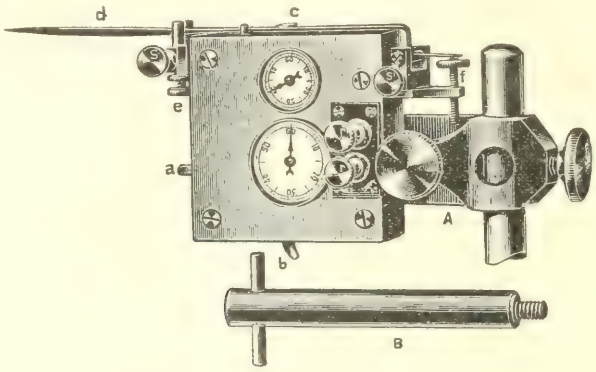

Fig. 14.—Jaquet chronograph.

Marey's polygraph is bulky, but accurate; its cost is $120, duty paid.

Gibson's polygraph takes four simultaneous ink tracings on glazed paper, but is more expensive than either of the two already mentioned. There are also numerous other instruments, such as those of Dudgeon, Frey, Richardson, and Mackenzie.

One of the best time-markers is the Jaquet, shown in Fig. 14. It can be used in connection with any polygraphic machine. When the pen-arm (*d*) is applied to the surface of the kymographic paper, it will record time tracings with intervals of seconds and fifths of seconds. It is operated by clockwork, the dials of which are shown in the cut. When the instrument has been attached to the vertical rod at *A* and clamped in position by the screw, pressure is made on the button *b* for seconds and at *c* for fifths of seconds, after which the lever is released, and the pen-arm writes the time divisions on the paper.

The best hospital polygraphic machine is that of Dr. T. B. Barringer, of New York.

A simple and inexpensive portable polygraphic apparatus has been devised by Dr. William N. Berkeley, also of New York. It is capable of writing the apex beat, the carotid or jugular pulse, and the respiratory curve. It is mainly intended for registering the carotid and jugular pulses.

THE ACTION OF CORPUS LUTEUM AND OF THE PINEAL BODY.

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AND
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A. Corpus Luteum.

Busquet,[1] in April, 1910, found that intravascular injections of extracts of the corpus luteum in the dog caused a considerable fall of blood-pressure, an acceleration of the heart, and a want of excitability in the vagus.

Villemin,[2] in May of the same year, similarly found that intravenous injection of extracts of the corpora lutea in the dog produced a general lowering of blood-pressure, acceleration of the heart rate, and loss of excitability of the vagus.

A. Weymeersch[3] states that extirpation of the corpora lutea is followed by a vasoconstriction of the uterine vessels. He holds the corpora lutea to be vasodilators.

N. Beloff[4] found the corpus luteum to lower arterial tension and slow the pulse.

Champy and Gley[5] found the corpus luteum to be highly toxic, but it is absolutely necessary that it should be very fresh and prepared very rapidly. They found that the extract of corpus luteum injected into the vein of the rabbit, in a dose not immediately lethal, immunizes the animal rapidly in five minutes, so that a second injection can be made ten times as large as the toxic dose. They call this rapid immunity "tachyphylaxia."

Champy and Gley[6] found that the extracts of the corpora lutea of menstruation in the cow have but little activity on the circulation. The commercial extracts prepared by desiccation *in vacuo* at a low temperature do not have any effect on the circulation. The extracts of the corpora lutea of the pregnant cow, however, are very active even when prepared by desiccation *in*

1 C.-r. de la Société de Biologie, lxviii, 18, p. 874.
2 Zentralblatt f. Physiologie, xxiv, 13, p. 585, 1910.
3 Zentralblatt f. Physiologie, xxv, 18, p. 831, 1911.
4 Journal de physiologie et de pathologie, xiii, 2, p. 292.
5 C.-r. de la Société de Biologie, lxxi, 26, p. 159.
6 C.-r. de la Société de Biologie, lxxi, 32, p. 442.

vacuo at a low temperature, and preserve their activity. The extracts of the corpora lutea of pregnant sheep are equally active. Those of the mare are less active. The extracts of the corpora lutea of the sow are most active. The corpora lutea lower the blood-pressure, and slow and weaken the heart in dogs. There is a difference in activity between the corpora lutea of menstruation and the corpora lutea of pregnancy.

We used the dried powdered corpus luteum of the cow rubbed up with water and filtered through cotton. Our experiments on the circulation were performed exclusively on cats, which, as is well known, have a circulatory apparatus unusually responsive to pharmacologic agents. The *pulse rate* was practically unchanged. The initial action was to depress the *blood-pressure* (20 to 40 mm. of mercury), which then immediately rose above normal for a short time.

Urinary Secretion.—Corpus luteum was found to have no perceptible action upon diuresis. However, it caused the appearance of 0.5 per cent. of glucose in the urine of the rabbit, as shown by the fermentation test.

Uterine Contractions.—Corpus luteum slightly increased the contractions in an unimpregnated uterus. In the pregnant uterus it increased the contractions. A uterine strip of the rabbit *in situ* was used, being kept in a bath of warm Ringer's solution of the temperature of the body and attached to a lever.

Intestinal Contractions.—A portion of an etherized rabbit's intestine was excised and suspended in Ringer's solution, through which oxygen was kept bubbling. It was attached to a lever. Corpus luteum, when added to the solution, increased the height of the contractions to a marked degree.

B. Pineal Body.

Exner and Boese[7] extirpated the pineal body in rabbits, but no results ensued after the first twenty-four hours.

Von Cyon[8] found that the intravenous injection of small doses of extracts of the pineal gland had no action upon blood-pressure. The rate of the heart was accelerated. Larger doses were found to increase the strength of the heart beat, slow it, and induce irregularity. There was a pulsus trigeminus, due to irritation of the central end of the vagus.

Ott and Scott showed that pineal extract and corpus luteum cause vasodilation in the male genitalia.

Eyster and Jordan[9] found that an aqueous extract of the pineal body of the sheep on intravenous injection in various animals caused a fall of the mean arterial blood-pressure. This fall was accompanied by vasodilation in the intestine. On the excised heart the pineal had no important effect, and, as it

7 Deutsche Zeitschrift f. Chirurgie, cvii, 143, p. 182, 1910.

8 "Die Gefässdrüsen," p. 226.

9 Proceedings of the American Physiological Society, xxiii; American Journal of Physiology, xxvii, 4.

did not change the pulse, they think the fall of pressure is due to the dilatation of the intestinal arterioles. They also observed transitory diuresis.

Our experiments were made upon cats, with the dried powder rubbed up with distilled water and filtered through cotton. Pineal body did not affect the *pulse rate* to any extent. The *arterial tension* fell below normal, then rose above normal, and remained there for some time.

Urinary Secretion.—Eyster has shown that the pineal body produces a transitory diuresis. We have found in the cat, with the renal oncometer and a registering apparatus, that during this diuresis there is an increase in volume of the kidney due to vasodilation.

Intestinal Contractions.—An excised piece of intestine of an etherized rabbit was used according to the Magnus method. Pineal body increased the height of the intestinal contractions to a slight extent.

Uterine Contractions.—A strip of the rabbit's uterus *in situ* was attached to a lever. The uterine strip was surrounded by warm Ringer's solution of the temperature of the body. In the non-pregnant uterus pineal body had no action. In the pregnant uterus it increased the contractile power.

Pupil.—In rabbits with the superior cervical ganglion excised, the local application of pineal body to the eye of the corresponding side caused a slight dilatation of the pupil.

Glycosuria.—In our preliminary communication[10] we stated that in rabbits the pineal body caused one-half of 1 per cent. of glucose to appear in the urine. Eyster and Jordan have confirmed this statement.

THE CAUSATION OF PSYCHOPATHIC MALADIES.

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(Concluded from the March issue.)

III.

If we examine closely the symptoms of fear, we invariably find the symptoms of functional psychosis. Fear affects the muscular and sensory systems, the vasomotor system, the respiratory system, the sudorific glands, the viscera, the heart, the intestines, etc. Bain, in describing the emotions of fear or terror, says, "The appearances may be distributed. Terror on the physical side shows both a loss and a transfer of nervous energy. The appearances may be distributed between the effects of relaxation and effects of tension. The relaxation is seen, as regards the muscles, in the dropping of the jaw, in the collapse overtaking all organs not specially excited, in trembling of the

[10] Monthly Cyclopedia and Medical Bulletin, Sept., 1911.

lips and other parts, and in the loosening of the sphincters. Next, as regards the organic processes and viscera. The digestion is everywhere weakened; the flow of saliva is checked, the gastric secretion arrested (appetite failing), the bowels deranged; the expiration is enfeebled. The heart and circulation are disturbed; there is either a flushing of the face or a deadly pallor. The skin shows symptoms—the cold sweat, the altered odor of the perspiration, the creeping action that lifts the hair. The kidneys are directly or indirectly affected. The sexual organs feel the depressing influence. The secretion of milk in the mother's breast is vitiated."[9]

Darwin gives the following description of fear:—

"The frightened man at first stands like a statue, motionless and breathless, or crouches down as if to escape observation. The heart beats quickly and violently; but it is very doubtful if it then works more efficiently than usual so as to send a greater supply of blood to the body; for the skin instantly becomes pale, as during incipient faintness. The paleness of the surface, however, is probably in large part or is exclusively due to the vasomotor center being affected in such a manner as to cause the contraction of the small arteries of the skin. That the skin is much affected under the sense of great fear we see in the marvelous manner in which the perspiration immediately exudes from it. This exudation is all the more remarkable as the surface is then cold, and hence the term, a cold sweat; whereas the sudorific glands are properly excited into action when the surface is heated. The hairs also on the skin stand erect, and the superficial muscles shiver. In connection with the disturbed action of the heart the breathing is hurried. The salivary glands act imperfectly; the mouth becomes dry and is often opened and shut. I have also noticed that under slight fear there is a slight tendency to yawn. One of the best symptoms is the trembling of all the muscles of the body. From this cause and from the dryness of the mouth, the voice becomes husky or indistinct, or may altogether fail."[10]

If we turn now to the manifestations of psychopathic maladies, we meet with the same symptoms:—

(*a*) The attacks may be muscular, involving symptoms such as trembling, shaking, paresis, paralysis, or rigidity; there may be affection of locomotion or of muscular co-ordination.

(*b*) There may be sensory disturbances,—anesthesia, paresthesia, analgesia, or hyperalgesia, as well as affection of muscular sense and kinesthesis.

(*c*) There may be skin disturbances, such as arrest of perspiration or profuse perspiration, especially under the influence of emotions, worry, and fatigue; such perspiration may also occur at night, and in some cases the fear of tuberculosis may be associated with such conditions.

(*d*) The lungs may become affected functionally, and there may occur respiratory disturbances: coughing, hawking, apnea, dyspnea, and asthmatic troubles may result.

9 "Mental Science," p. 233.

10 "Origin of Species," p. 290.

(*e*) The heart becomes affected, bringing about precordial pain; palpitation of the heart, bradycardia, tachycardia, and cardiac arrhythmia may result.

(*f*) The stomach and intestines become affected; indigestion and vague fugitive soreness and pain may be experienced all over or in special regions of the abdomen; constipation or diarrhea may ensue.

(*g*) The renal apparatus may become affected and its activity arrested, or, as is more often the case in the milder forms of psychopathic troubles, there may be present an alteration in the amount or frequency of micturition, such as is found in the conditions of anuria and polyuria.

(*h*) Menstruation becomes disturbed, and we may meet with conditions of dysmenorrhea, amenorrhea, menorrhagia, and other disturbances of the tubes, ovaries, and uterus.

(*i*) There are disturbances of the nervous system, such as headache and a general dull sensation of fatigue and paresis of all mental functions, with dizziness and vertigo.

On the mental side we find in the psychopathies the following disturbances:—

(*a*) Affections of perceptual activity,—illusions and hallucinations.

(*b*) Affections of intellectual activity,—argumentativeness in regard to insignificant things, metaphysical, and theological disputations.

(*c*) Affections of the moral sense,—scrupulousness, overconscientiousness, not living up to ideal states.

(*d*) Affections of religious life,—commission of sins and fear of punishment.

(*e*) Affections of social life,—timidity, blushing, etc.

(*f*) Affections in regard to objects, such as astrophobia, acmephobia, agoraphobia, claustrophobia, etc.

(*g*) Affections of conceptual life,—insistent ideas.

(*h*) Affections of the attention,—aprosexia.

(*i*) Affections of the will,—states of aboulia and uncontrollable impulses.

(*j*) Affections of the memory,—amnesic and paramnesic states.

(*k*) General mental fatigue.

(*l*) Affections of sexual life,—perversion and inversion.

(*m*) Affections in regard to marital relations.

(*n*) Affections in regard to personal life,—diffidence, self-condemnation, self-depreciation.

(*o*) Affections of apparent loss of personality,—feeling of self gone.

(*p*) Formation of new personalities,—dual and multiple personality.

In connection with all such psychoneurotic affections we find invariably present a feeling of unrest, of uneasiness, a feeling of anxiety, *conscious or subconscious*, an anxious feeling of some impending evil. In all such affections we find the brooding spirit of the most powerful of all animal instincts,—the fear instinct.

IV.

The teleology of fear is quite clear. Fear is the guardian instinct of life. The intensity of the struggle for existence, the preservation of life of the animal, is expressed in the instinct of fear. The fear instinct in its mild form, when connected with what is strange and unfamiliar or with what is really dangerous to the animal, is of the utmost consequence to the life existence of the animal. What is strange and unfamiliar may be a menace to life, and it is a protection, if under such conditions the fear instinct is aroused. It is again of the utmost importance in weak animals, such as hares or rabbits, to have the fear instinct easily aroused by the slightest strange stimulus: the animal is defenseless, and its refuge, its safety, is in running. The unfamiliar stimulus may be a signal of danger, and it is safer to get away from it; the animal cannot take chances. On the other hand, animals that are too timid, so that even the familiar becomes too suspicious, cannot get their food and cannot leave a progeny,—they become eliminated by the process of natural selection. There is a certain amount of trust that nature demands, even of its most defenseless and timid children. The business of life cannot go on without a certain amount of credit.

Animals in whom the fear instinct can be aroused to a high degree become paralyzed and perish. Under such conditions the fear instinct not only ceases to be of protective value, but is the very one that brings about the destruction of the animal possessed by it. Intense fear paralyzes the animal. "One of the most terrible effects of fear," says Mosso, "is the paralysis which allows neither of escape nor defense." "Not all the phenomena of fear can be explained on the theory of natural selection. In their extreme degree they are morbid phenomena indicating imperfection of the organism. One might almost say that nature had not been able to find a substance for brain and spinal cord which should be extremely sensitive and yet should never, under the influence of exceptional or unusual stimuli, exceed in its reactions those physiological limits which are best adapted to the preservation of the animal."[11] Mosso quotes Haller to the effect that "all phenomena of fear common to animals are not aimed at the preservation of the timid, but at their destruction." The fear instinct is no doubt one of the most fundamental and one of the most vital of animal instincts, but when it rises to an extreme degree, or when associated with familiar instead of strange and unfamiliar objects, then we may agree with Haller that the phenomena are not aimed at the preservation of the animal, but at its destruction; or, as Darwin puts it, are of "disservice to the animal." This is just what is found in the case of psychopathic affections. The fear instinct becomes aroused and cultivated in early childhood and becomes associated in later life with particular events, objects, and special states.

When the instinct of fear is aroused in connection with some future impending misfortune, the feeling of expectation with all its physiological

[11] "Fear," p. 171.

changes, muscular, respiratory, cardiac, epigastric, and intestinal, goes to form that complex feeling of anxiety so highly characteristic of the acute varieties of psychopathic maladies. When fear reaches its acme, the heart is specially affected; the circulatory and respiratory changes become prominent and give rise to that form of oppression which weighs like an incubus on the patient,—the feeling known as "precordial anxiety."

The fear instinct is the ultimate cause of functional psychosis,—it is the soil on which grow luxuriantly the infinite varieties of psychopathic affections. The body, sense, intellect, and will are all profoundly affected by the irresistible sweep of the fear instinct as manifested in the overwhelming feeling of anxiety. The fear instinct and its offspring—anxiety—weaken, dissociate, and paralyze the functions of the body and mind, giving rise to the various symptoms of psychopathic diseases. The fear instinct keeps on gnawing at the very vitals of the psychopathic patient. Even at his best the psychopathic patient is not free from the workings of the fear instinct, from the feeling of anxiety which, as the patients themselves put it, "hangs like a cloud on the margin or fringe of consciousness." From time to time he can hear the distant, threatening rumbling of the fear instinct. Even when the latter is apparently stilled the pangs of anxiety torment the patient like a dull toothache.

Montaigne, the great anatomist of human passions, in writing of fear, says, "I am not so good a naturalist (as they call it) as to discern by what secret springs fear has its motion in us; but be this as it may, it is a strange passion, and such a one as the physicians say there is no other whatever that sooner dethrones our judgment from its proper seat; which is so true, that I myself have seen very many become frantic through fear; and even in those of the best settled temper, it is most certain that it begets a terrible astonishment and confusion during the fit. I omit the vulgar sort, to whom it one while represents their great-grandsires risen out of their graves in their shrouds, another while hobgoblins, specters, and chimeras; but even among soldiers, a sort of men over whom, of all others, it ought to have the least power, how often has it converted flocks of sheep into armed squadrons, reeds and bullrushes into pikes and lances, and friends into enemies . . . . *adeo pavor etiam auxilia formidat.* . . . . The thing in the world I am most afraid of is fear, that passion alone, in the trouble of it, exceeding all other accidents. . . . . *Tum pavor sapientiam omnem mihi ex animo expectorat.* Such as have been well banged in some skirmish, may yet, all wounded and bloody as they are, be brought on again the next day to the charge; but such as have once conceived a good sound fear of the enemy will never be made so much as to look the enemy in the face. Such as are in immediate fear of losing their estates, of banishment or of slavery, live in perpetual anguish, and lose all appetite and repose; whereas such as are actually poor, slaves or exiles, ofttimes live as merrily as other folks. And the many people who, impatient of perpetual alarms of fear, have hanged or drowned themselves, or dashed themselves to pieces, give us sufficiently to

understand that fear is more importunate and insupportable than death itself."[12]

V.

That fear is a fundamentally important element in neuroses and psychoses has been fully acknowledged by many a neurologist and psychiatrist. Thus, Oppenheim says, "Fear is a common symptom in the neuroses. It may be an indefinite feeling of anxiety not awakened by any particular cause, or it may be definite concepts and external influences which call the fear into action. The sensation is variously described. It has its seat, as a rule, in the cardiac region, at other times in the head. The patient feels as if his heart were standing still; he thinks that he must fall or that he will get a stroke. Some explain the condition thus: 'It seems to me that I have done something wrong, as if something terrible is going to happen.' The expression of the face reveals a condition of anxiety, the fear often producing vasomotor, secretory, and motor disturbances; the face reddens or becomes pallid, perspiration breaks out, the saliva ceases to flow, the lips and tongue become dry, the pulse and respiration become accelerated."[13]

"A materially different picture," says Kirchoff, "is presented when the feeling of fear enters the symptom group (of melancholia). This feeling is referred to the cardiac region (precordial fear), and is one of the most important and frequent accompaniments of severe melancholia. The external quiet of severe simple melancholia becomes converted into anxious restlessness. From the start sleep is almost always disturbed, because the patient is tormented by the pressure in the cardiac region. Other disagreeable sensations soon follow, such as constriction of the neck or a dull feeling in the head; bad dreams and anxious thoughts become more numerous. The daily work may make the condition endurable during the day for a time, but in the stillness of the night it is rapidly intensified, and if sleep does not refresh the excited brain, the days likewise are filled more and more with disheartening fears. The implication of the organs of the body is much more distinct in anxious than in simple melancholia. The appetite is lost, the nutrition is rapidly impaired. Respiration is superficial, the heart's action is accelerated and often irregular, the pulse is small, the skin is cool. When the terror shows variations or occurs in paroxysms, its increase is shown by suppression of the urine and perspiration, its subsidence by increase in these secretions. The more chronic the precordial fear the more indistinct do these symptoms become. . . . . Religious notions are often awakened and are then explained as the dread of being possessed by evil spirits. . . . . In more severe

[12] "Essays," vol. i, pp. 55-57.

[13] "Diseases of the Nervous System," p. 725. One cannot help agreeing with Oppenheim in his protest against the superficial sexual "conversion" speculations in regard to the causation of psychopathic diseases in general and of the feeling of anxiety or so-called "Angstneurosen" in particular: "The view that these phenomena are always due to sexual excesses or perversions does not agree with my observations." In fact, it does not agree with the observations of any unbiased, experienced psychopathologist who is not blinded by a strange love and peculiar enthusiasm for the phenomena of sexual perversions.

cases the internal life becomes a real dreamy condition in which external expressions are received in a confused, shadowy and inimical manner. A terrible, baseless, but paralyzing fear takes possession of consciousness."[14] The anxiety states of neurosis and psychosis are essentially due to the awakening of the fear instinct normally present in every living being. The fear instinct is a fundamental one; it is only inhibited by the whole course of civilization and by the training and education of social life. Like the jinn of the "Arabian Nights," it slumbers in the breast of every normal individual and comes fully to life in the various neuroses and psychoses.

Kraepelin and his school lay, with right, special stress on the fact that "Fear is by far the most important persistent emotion in morbid conditions. . . . . Fear is manifested by anxious excitement and by anxious tension." "Experience," says Kraepelin, "shows an intimate relationship between insistent psychosis and the so-called 'phobias,' the *anxiety states*[15] which in such patients become associated with definite impressions, actions, and views." They are associated with the thought of some great unknown danger, although the patient may be aware that in reality nothing of the kind will befall him. Violent heart action, pallor, a feeling of anxiety, tremor, cold sweat, meteorismus, diarrhea, polyuria, weakness in the legs, attacks of fainting, so that the patient loses control of his limbs and occasionally simply collapses. "These states," says Kraepelin, with his usual insight into abnormal mental life, "remind one of the feeling of anxiety which in the case of healthy people may in view of a painful situation or of a serious danger deprive one of the calmness of judgment and confidence in his movements."[16] Thus, we find from different standpoints that the feeling of anxiety with all its accompanying phenomena is one of the manifestations of the most fundamental, the most potent, of animal instincts, the fear instinct, which is at the basis of all psychopathic maladies.

The fear instinct as the most subtle and most fundamental of all instincts is well described by Kipling:—

Very softly down the glade runs a waiting, watching shade,
And the whisper spreads and widens far and near;
And the sweat is on thy brow, for he passes even now—
He is Fear, O Little Hunter, he is Fear!

Ere the moon has climbed the mountain, ere the rocks are ribbed with light,
When the downward dipping trails are dank and drear,
Comes a breathing hard behind thee—*snuffle—snuffle* through the night;
It is Fear, O Little Hunter, it is Fear!

On thy knees and draw the bow; bid the shrilling arrow go:
In the empty, mocking thicket plunge the spear;
But thy hands are loosed and weak, and the blood has left thy cheek—
It is Fear, O Little Hunter, it is Fear!

[14] "Handbook of Insanity," p. 189.
[15] My italics.
[16] "Psychiatrie," vol. ii, p. 541.

When the heat-cloud sucks the tempest, when the slivered pine trees fall,
When the blinding, blaring rain-squalls lash and veer;
Through the war gongs of the thunder rings a voice more loud than all—
It is Fear, O Little Hunter, it is Fear!

Now the spates are banked and deep; now the footless boulders leap—
Now the lightning shows each littlest leaf-rib clear.
But thy throat is shut and dried, and thy heart against thy side
Hammers: Fear, O Little Hunter,—This is Fear!

VI.

The fear instinct may become associated with any of the bodily functions, *e.g.*, with the sexual instinct, and may give rise to subconscious states of which an abnormally developed suggestibility is characteristic. These conditions may in turn give rise to somopsychosis and psychoneurosis, according to the temperament, the training, and the critical, final event that forms the last link in the production of definite psychopathic symptoms. But in all such cases it is not the particular organic function, whether sexual or other, that produces the particular psychopathic state; it is essentially the awakening of the most powerful and least controllable of all animal instincts,—the fear instinct associated with the sense of the mysterious. Psychopathic maladies do not depend on the abnormal functioning of some one bodily organ or function, but on a general emotion which is common to all bodily and mental functions, viz., the fundamental primitive fear instinct which relates to life in general. The deranged functions, cardiac, respiratory, or sexual; fatigue, conflict, shock, are only the *occasions*. To regard any of these occasions as the source of psychopathic maladies is like regarding the weathercock as the cause of the wind. *The fear instinct alone is the source of all psychopathic maladies.*

I shall adduce here a few cases which may be taken as fair examples of hundreds and hundreds of similar ones:—

N. R. Russian. Student. Aged 19. Family history good. Patient complains of heart trouble. He has pains around the cardiac region, suffers from palpitation of the heart, and thinks he has some trouble of a very serious character. A physical examination shows the patient to be in good condition. Except for rapidity and occasional irregularity of action the heart is quite normal. A mental examination discloses the fact that the patient had an early religious training calculated to instill fears of the supernatural, fear of punishment, pain, sickness, death. The fear of committing a sin was ingrained in the patient from his very tender childhood. When about the age of 9 he learned in school the habit of masturbation from his companions, who even induced him to homosexual relations, although he had not the least trace of homosexual tendencies. The sin of it preyed greatly on his mind. Owing to religious and moral scruples, however, the habit did not get hold of him, and he stopped for several years until, when about the age of 13, he entered another school and came in contact with a loose set of boys, older than himself, who talked about women and thus excited his sexual passions. There were no homosexual relations this time, but the habit of self-abuse continued with various intermissions for two years, when some quack literature fell into his hands. He read in quack pamphlets about the great dangers of masturbation, how it specially affected the heart, giving rise to serious and fatal cardiac troubles. The boy became alarmed; he began to brood over his condition, to listen to his heart, and became convinced that he really suffered from a very serious heart defect induced by

his habit of self-abuse. After some hesitation he decided to consult a heart specialist, who told him that he did have some heart trouble of a nervous character. This frightened the patient, as he thought that the doctor did not wish to inform him of the gravity of his disease. He next went to another physician who, playing on his fear, told him that his trouble was really serious and that he was going to cure it. This frightened the patient thoroughly and confirmed him in his fears. The dread of heart disease became fixed. For a few years he kept on suffering from heart trouble with cardiac pains and palpitation,—he became a typical psychosomatic patient. It was the fear instinct—at first aroused by religious and moral fears concerning the sexual function, and then fixed on the heart in an intensified way by the reading of quack literature, and heightened and cultivated by medical examination and unscrupulous medical treatment—that figured most prominently in this case.

C. L. Chemist. American. Aged 49. Family history good. Catholic; very religious. Great fear of sin, fear of punishment. About the age of 9 the patient had an attack of malaria from which he suffered for about four years. This developed a fear of disease and death. When about the age of 15 he learned from boys in school about sexual relations, and had many talks on the subject, which excited him so that he began to masturbate. The fear of the sin committed terrified him. The first night he masturbated he suffered greatly. After the act the remorse was so intense that he prayed the whole night through. A week later he masturbated again, and again passed the rest of the night in prayer. He then read some quack pamphlets and especially quack advertisements. He began to fear the dangerous consequences of his self-abuse. He stopped masturbation, but the fear of disease grew upon him. He was especially alarmed on the nights when he happened to have an involuntary emission; he feared the oozing away of his vitality,—a dangerous consequence of which the quack advertisements particularly warned him. This fear lasted until the age of 25. The state of constant terror affected his appetite and digestion. He went to a physician, who told him, after a careful examination, that he was suffering from gastritis, and a very dangerous form of it; that he was going to be sick in bed for not less than two years, and that he was going to be an invalid the rest of his life. This unfavorable prognosis was duly fulfilled; the patient went to bed, was sick for a couple of years, and has become an invalid,—a confirmed psychosomatic. The fear instinct became cultivated, fixed and centered, by continuous brooding over the function of digestion.

A lady aged about 37. From early childhood fear of sickness and death. When about 15 she suffered from gastric and intestinal troubles; had severe attacks of dysentery. About the same time she had a shock in that her little brother, aged 2, to whom she was much attached, died of some intestinal affection. This aroused fears in regard to herself. The patient was in bed for two months. It was then discovered that she had a slight lateral curvature of the spine. This accentuated the fear of disease and death, and increased the brooding. A few years later the patient suffered from a severe attack of typhoid fever. After convalescence she continued to brood, fearing that she would become an invalid. The fear of death kept on growing and finally gained mastery over her. As the patient puts it: "I have such an unmitigated horror of death. If anyone I have ever seen dies, I do not sleep for weeks. I am afraid, though my reason tells me how absurd it is."

Again, I have had cases in which the fear instinct became attached to the hair. Thus, in one young married lady aged 25, the hair began to fall out. She began to worry over it and to fear that her beautiful head of hair, of which she had been proud, would be ruined, and that she would become bald. She was in an agony over the condition of her hair, and finally gave up all social functions, all pleasures and interests, in life. Like Absalom, she was entangled by the fear instinct in the tresses of her beautiful hair.

There are cases, too, somewhat less pathetic. The fear instinct, like the sausage in the nursery tale, may become attached even to the nose. Thus, one of my patients, a girl of 22, after a series of attacks of "la grippe," began to worry and fear the depredations of sickness on her beauty. Her attention finally became centered on the irregularities of her nose. She suffered a good deal in her efforts to correct the supposed nasal defects and then decided to go to a specialist, who took advantage of her ignorance and fear and performed a slight operation to improve the beauty of the nose. As fate would have it, he apparently infected her during the operation, pimples breaking out all over her face. The fear became a terror, a panic. The fear instinct obsessed her through the intermediation of her nose.

It is by no means a matter of chance that one patient should be a psychosomatic while another is a psychoneurotic. This is found, by a psychogenetic examination of the conscious and especially of the subconscious mind, to depend definitely on the character, temperament, and the whole training of the patient, as well as on the nature of the event that has aroused the slumbering fear instinct. Patients of an introspective turn of mind, with their attention directed to mental and social accomplishments, early trained in the rigid school of religion, morals, and overrefined social traditions, sensitive to any deviations from the "categorical imperatives,"—the commandments given by the divine trinity of religion, morality, and society, as taught in the nursery, the Sunday school, and the market-place,—such patients, when subjected to experiences that touch their sensibilities, setting the primitive fear instinct to work, are confirmed *psychoneurotics*. Patients who are not mentally introspective and are not trained in the fear of the Lord and Mrs. Grundy, but have their attentions and fears turned to their physical needs and bodily functions, such patients are naturally *psychosomatics*.

From our present vantage-ground we can clearly realize why certain experiences become subconscious or dissociated and "present subconsciously," as the clinical psychopathologist is apt to put it. Fear more than any other emotion brings about the factors favorable for the production of subconscious states, limitation of voluntary movements, limitation of the field of consciousness, monotony, and inhibition. We know what a paralyzing effect on all the functions of the body and of the mind fear has. The man stricken by the fear instinct remains immovable and his mind is a blank. All ideas except that of the danger at hand are inhibited, and possibly under no other condition is the factor of monotony so operative. All the factors requisite for the production of subconscious states are present in their full force, and the individual falls into a subconscious state dissociated from the rest of waking life. So greatly is fear conducive to the production of subconscious states, so powerful is the fear instinct in its paralyzing effect on the waking consciousness, that it is often used as a means of bringing about hypnosis and allied conditions. In all creeds of the "healing" variety, the faith that makes their devotees subject to all forms of subconscious states depends in reality upon the fear instinct. In the superficial love, goodness, and optimism of the

mental and Christian scientist is hidden the baneful, the noxious, power of the primitive animal fear instinct. In a superstitious person, or in a person trained in fear from early childhood, an experience conceived in fear begets dissociation and as such becomes subconscious, giving rise to the various forms of recurrent mental states or psychopathic maladies, somopsychosis, and psychoneurosis.

THE DUCTLESS GLANDS IN SURGICAL THERAPEUTICS.*

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The subject of internal secretion in its relations to surgery includes many applications which are so familiar to you that they would hardly be worthy of your attention. There are, however, surgical fields in which the internal secretions are probably destined to play new rôles; it is to these that I propose to limit my remarks.

Thyroid Apparatus.

Several laboratories in Europe, including the Pasteur Institute, have in recent years studied the relationship between the thyroid gland and general immunity. In 1907, for example, Miss L. Fassin found at the Bacteriological Institute of Liége that the subcutaneous injection of a fluidextract of thyroid was rapidly followed by a marked increase of alexins—the germicidal and antitoxic substances of the blood. This increase reached its maximum in twenty-four hours, the alexins then gradually receding to normal. Complete thyroidectomy was found, on the other hand, to cause a marked diminution of the same protective substances. Lest this latter result be due to traumatism, Miss Fassin performed the same operation in other animals, but leaving the thyroid *in situ,* and even complicated it by removing the spleen. She failed to produce the same effect, thus showing that it was the thyroid gland itself which produced the increase and decrease of protective substances in the blood.

The following year Stepanoff, working at the Pasteur Institute in Paris, reported experiments of a similar nature, but with the opsonic index as guide. He noted a marked elevation of the latter under the influence of thyroid extract in rabbits. His experiments led him to ascribe "the opsonizing action of thyroid extract to the thyroglobulin of Oswald which is normally present in the thyroid gland." Marbé, also working at the Pasteur Institute, likewise found that thyroid extract raised markedly the opsonic index, while removal of the thyroid caused what he terms "a marked decline of opsonic power." Studies *in vitro* showed further that the presence of thyroid extract increased the phagocytic activity of leucocytes. Frugoni ascertained, more-

* Read before the Clinical Congress of Surgeons of North America, Philadelphia, November 11, 1911.

over, that thyroid gland markedly raised not only the opsonic index of the blood, but also its germicidal power. These experiments, to which others giving similar results could be added, will suffice to show that a number of European investigators have confirmed the view that the thyroid gland is the source of a secretion which augments the germicidal and antitoxic power of the blood, while enhancing as opsonin the germicidal activity of the phagocytes.

It can only be said that all these observations "confirmed" the view mentioned, because those who have kept in touch with my labors on the ductless glands are familiar with the fact that, four years before Miss Fassin, I had pointed out the influence of the thyroid gland in general immunity, *i.e.*, that it increased the germicidal and antitoxic power of the blood, and that I also antedated by one year the observations of Stepanoff that the same secretion increased its opsonic power, and that the thyroid was the source of the substance termed by Wright "opsonin." The American origin of this conception is in fact recognized abroad: Léopold-Lévi and de Rothschild, for example, state in a recently published work on the thyroid gland "Sajous has attributed, among the functions of the thyroid body, a rôle to the latter which he assimilates to that of opsonins and to autoantitoxins. *More recently* Miss Fassin, M. Stepanoff, and M. Marbé have confirmed on their side the influence of the thyroid on the blood's asset in alexins and opsonins."

What the above-named and other investigators who have studied the question have so far overlooked, however, is the all-important co-operation of the parathyroids in the immunizing process. Indeed, these glandules show a sufficiently close relationship with the latter to suggest that they are the main active factors in the protection of the organism. We know, for instance, that, while removal of the thyroid proper in animals affects only their growth and development, it is only when the parathyroids are also removed that tetany, due to the accumulation of toxic wastes in the blood, develops. Again, while thyroid preparations are practically valueless in the treatment of tetany, parathyroids counteract it as long as their action lasts. There being quite a number of facts in support of Gley's view that the thyroid and parathyroids co-operate functionally, while their anatomical relationship is such that great care is necessary to isolate the parathyroids when the thyroid is removed, it is probable that the germicidal and antitoxic power ascribed to the latter should be mainly attributed to the parathyroid extract or tissue which thyroid preparations contain. For details upon this question, I must refer you to previous writings.[1]

From the practical standpoint, and notably in its application to surgery, the statement of Professor Malvoz, of the University of Liége, that the influence of the thyroid body in the defense of the organism "opens a new path which cannot but prove fruitful" can hardly be sufficiently emphasized: *Antiseptic surgery has afforded the means to prevent infection; the power to enhance at will the autoprotective resources of the body when these are deficient, or where*

[1] Sajous: "Internal Secretions," etc., p. 1093, and New York Med. Journal, Nov. 11, 1911.

infection has occurred, fills a gap in the development of this great question. I need hardly urge that the investigations referred to above represent but the initial efforts in this direction, and that the use of thyroid preparations in this connection cannot but eventually suggest more exact methods to attain the same end. Yet, let us consider the field it opens even in its present primitive stage, by citing some of its practical applications.

In 1907, I urged that thyroid preparations, owing to their influence on oxidation and their power to increase both the opsonins and the germicidal activity of the blood, were indicated in the *early* stage of tuberculosis—mainly on account of the content of the tubercle bacillus in phosphorus, viz., 55.23 per cent. of its ash—a fact sustained clinically. Recently, Frugoni found not only that thyroid gland markedly raised the opsonic index of tuberculous animals, but also the active germicidal power of their blood. That this should entail in the surgical field marked progress in the treatment of all conditions due to tuberculosis is self-evident. In hip-joint disease and other tuberculous bone processes, for example, thyroid is clearly indicated.

Besides its powerful stimulating action on the defensive functions, thyroid gland, as shown by Parhon, Macallum, and others, hastens calcium metabolism. This accounts for its value in osteomyelitis and rachitis. We have striking evidence of its efficiency in the treatment of deficient metabolic activity in osseous tissue in the rapid growth of the skeleton in cretinism brought about with its aid. This has suggested its use in delayed union in fractures, and accounts for its greater value for this purpose in the young than in the adult, its therapeutic action in this class of cases growing less as age advances.

Another indication for thyroid preparations, owing, however, mainly to their influence on general oxidation and metabolism, is in subjects of hypothyroidia who are about to be subjected to an operation. The presence of this condition, a larval and covert form of myxedema, is indicated mainly by a tendency to obesity, cold hands and feet, dry skin, brittle hair perhaps, mental and physical torpor, rheumatic pains in the occiput and back usually treated unavailingly for rheumatism. Here deficient oxidation and metabolism entail a correspondingly deficient production of opsonin and other protective bodies. Such cases are readily infected and their recovery after any operation, even sometimes after a trivial one, is unusually slow. A preparatory course of thyroid gland transforms completely such a case into one in which the chances of a successful result are as good as in a normal individual.

In febrile infections the thyroid gland is sometimes so active that it becomes enlarged and even quite painful. This is now recognized as a distinct effort to raise the protective process to adequate efficiency. In surgical diseases, such as septicemia and erysipelas, aid afforded to the gland by administering thyroid preparations has been found to curtail these diseases. It fulfills in a measure the rôle of antistreptococcic serum. This applies also to suppurative processes of all sorts due to general adynamia; the rapidity with which a thyroid preparation produces beneficial effects in this class of disorders is sometimes striking. This applies also to suppurative processes situated in special organs, such as the eye, ear, nose and throat, and the sinuses.

When the purpose is to increase the germicidal and antitoxic power of the blood, and also phagocytic activity, in any of the foregoing disorders excepting pulmonary tuberculosis, the dose required must be somewhat large,—but not excessive. A condition similar to Wright's negative phase in vaccine therapy is readily brought about by excessive doses. In the laboratory such doses decrease instead of increasing the resistance of animals to infection. Again, as I will have occasion to show elsewhere, there is good ground for the belief that the so-called untoward effects observed under thyroid medication are closely allied to anaphylaxis. Two grains of the desiccated gland in tablet form, slowly increased to 3 grains, three times a day, is the maximum that should be administered in the adult, and the patient should be carefully watched to forestall any undue action of the remedy. The best indication of any untoward effect is the pulse. Any considerable quickening or palpitation indicates that the remedy should be discontinued a few days, then resumed in smaller doses. Again, the preparations on the market vary in strength. The above dose refers to Burroughs, Wellcome and Co.'s tabloids, which are standardized at 0.2 per cent. of iodine in organic combination. If one of our American preparations—Armour's, Parke, Davis and Co.'s, etc.—is used, a somewhat larger dose may prove necessary to obtain corresponding effects.

Summarizing the above facts: All the experimental and clinical evidence published so far has sustained the results of my own researches to the effect that the thyroid body takes an active part in general immunity, and that thyroid preparations enable us to increase the germicidal and antitoxic power of the blood, while enhancing, as opsonin, phagocytic activity. Thyroid gland is thus indicated in all morbid conditions in which the defensive resources of the body are deficient. As it also increases metabolic activity and reparative processes when administered in small doses (not the dose stated in the U. S. P., which is excessive and therefore dangerous), thyroid preparations are also indicated when the process of repair is delayed owing to deficient cellular metabolism.

Parathyroids.

Beyond the personal view submitted above, that the parathyroid glandules are the main factors in the immunizing process, I have nothing to offer in their relationship to surgery which is not generally known. This functional connection with the autoprotective functions further emphasizes, however, the importance of transplanting these small organs, as advocated by Halsted, into the thyroid gland when a parathyroid gland has been accidentally removed or deprived of its blood-supply, or when a deficiency greater than one-half of the total parathyroid activity has thus been created. His ratio of successes, 61 per cent., when autotransplantation of parathyroids was practised in the thyroid gland itself or behind the rectus abdominis, and the excellent effects on the health and spirits of animals thus treated, indicate the value of the measure.

An important practical point is that Halsted found that feeding of beeves' parathyroids, both dried and fresh, also procured benefit—provided

there existed parathyroid deficiency. Palliation can, of course, only be expected by their use, unless the case be one of injury to the parathyroids, as in an instance reported by Brainham,[2] recovery of the organs enabling them eventually to resume their functions. Where the parathyroids have been removed, however, nothing but grafting will save the case. This is well illustrated by a case reported by W. H. Brown.[3] Here the implantation of a thyroid and its parathyroids obtained from a small monkey, and also one month later of a piece of human thyroid the size of a small walnut and three parathyroids, all obtained one-half hour after death from the body of a man who had died of Bright's disease and uremia, alone arrested a very severe tetany, after every other known measure, including the oral use of parathyroids, had been tried without avail.

The lesson to be derived from what experience is now on record is that the oral use of parathyroids, either in the form of emulsion or desiccated, will afford but temporary relief. Permanent results, that is to say, a continuous supply of opsonins and other antibodies to break down adequately the spasmogenic poisons, can only be expected if the lost parathyroids are replaced by grafting: into whatever portion of the thyroid is left, or under one of the recti abdominis, or, better, under either sternocleidomastoid, owing to the proximity of the subclavian vein into which the lymphatics normally carry both the thyroid and parathyroid products.

The recognition of the parathyroid secretion as a participant in the immunizing process also emphasizes the value of a precaution dictated by practical experience, viz., the elimination of meat from the diet of a patient suffering from tetany, owing to the spasmogenic wastes this form of proteid contributes to the blood.

Adrenals.

Three of the newer features of their action merit perhaps your attention as surgeons, viz., the use of adrenal preparations in toxemias, in cancer, and also in postoperative intestinal atony.

It had been noted long ago by Abelous and Langlois, Charrin, Oppenheim, and others that the adrenals possessed antitoxic functions. This has been found to apply to infections and certain poisons: strychnine, for example. It may be recalled that I attributed a rôle to the adrenals in general immunity as far back as 1903, the specific action carried on by their secretion being that of amboceptor. A recent study of the adrenals in various diseases by Goldzieher[4] showed a marked diminution of epinephrin in the adrenals of subjects in whom death had been due to an infection: pneumonia, puerperal meningitis, etc., thus showing that in all such processes there is abnormal activity of the organs, *i.e.*, an extraordinary output of adrenal secretion. He attributes death in such cases, as I had several years earlier, to acute adrenal insufficiency. The data now published on the antitoxic properties of the adre-

[2] Amer. Jour. Med. Sci., vol. xlviii, p. 161, 1908.

[3] Annals of Surgery, March, 1911.

[4] Wiener klin. Woch., June 2, 1910.

nals, by various experimenters and clinicians, clearly point to the fact that these organs are endowed with such a function—probably working, as I have long urged, in harmony with the thyroparathyroid secretion.

Is it to this property that we must ascribe the recession of cancerous growths in mice after the injection into them of the adrenal active principle? Both in rats and mice, carcinomatous as well as sarcomatous neoplasms were caused to disappear, while injections of adrenalin prevented the growth of cancerous grafts, which in control animals developed more or less rapidly. Reicher,[5] who conducted these researches in Lewin's laboratory, then tried the same treatment in man. In a case of sarcoma the tumor was reduced to one-third of its size, which third with the aid of X-rays and the high-frequency current was caused to disappear. Malignant lymphomata were likewise favorably influenced, though not cured, a result also attained in a case of melanosarcoma.

My own experience in this connection only suggests that in inoperable cases adrenal gland seemed to prolong life by antagonizing the progress of cachexia, especially when given with iron. Suggestive in this connection is that, in Reicher's words: "It is remarkable that during the treatments the patients increased much in weight—up to 14 pounds. There must be a constant anomaly of metabolism somewhere." I may recall in this connection that eight years earlier I had pointed out that the function of the adrenal secretion was to take up the oxygen of the air in the lungs and to sustain tissue oxidation, metabolism, and nutrition—thus accounting for the gain in weight Reicher observed.

The practical feature in this connection is that these observations afford surgeons a side light upon the pathogenesis of cancer which may eventually prove fruitful in suggesting new lines of treatment of inoperable growths. It is offered here, of course, only as a promising working proposition.

To the adrenals seems also to belong the credit of offering the opportunity to antagonize postoperative intestinal atony. When in 1903 I submitted the opinion that the thyroid secretion enhanced the activity of the adrenals—a view since sustained by several experimenters—and that the adrenal secretion, on the other hand, influenced the functional activity of the pancreas, pituitary body, and other organs, the statement created some surprise. This feeling died out, however, when, three years later, Starling termed *hormones* a group of substances secreted by various organs which could enhance the functions of other organs. Precisely as I had previously held, these hormones were secreted, according to Starling, by the organs which produced them in the course of their normal functions, and reached the distant structures they influenced through the intermediary of the blood. What I termed the "adrenal system" owes in great part its functional activity to this chemical co-ordination, the adrenal secretion being especially prominent in the process owing to the function I attributed to it, viz., that of sustaining oxidation and metabolism as a constituent of the hemoglobin molecule.

[5] Deut. med. Woch., Nu. 22, 1910, and Berl. klin. Woch., Nu. 20, 1911.

Bayliss and Starling termed *secretin* a hormone formed in the intestinal mucous membrane under the influence of the hydrochloric acid from the stomach, which is the chemical excitant of the pancreatic secretion. Now, from my viewpoint, this is not a specific excitant; I showed in 1907[6] that it presented several of the properties of adrenal extractives. We are dealing, therefore, not with a local product, but with a component of all tissues (being, as such, what Starling has termed a "mamma hormone") which, when present in unusual quantities in any organ, is capable of enhancing correspondingly its functional activity owing to the influence exerted on local oxidation and metabolism. Another hormone has been obtained from the gastric mucosa by Dohrn, Marxer, and Zuelzer[7] which is found to enhance intestinal peristalsis. But inasmuch as it is (from my viewpoint) a ubiquitous component of all tissues, and the difficulty of collecting it during digestion being obvious, search for it elsewhere suggested itself. It was found in ample quantities in the spleen—that junkshop where red corpuscles (which, as I suggested in 1903, are the common carriers of the adrenal principle) are broken up along with other cells. That the splenic hormone referred to is not purely the adrenalin-laden albuminous constituent of the hemoglobin derived from red corpuscles is self-evident, since leucocytes, with their nucleoproteid granulations, their trypsin-like cytase, and other ferments, are also broken up in the spleen. The fact remains, however, that this splenic hormone specifically stimulates intestinal peristalsis to a degree so remarkable experimentally that it may be readily shown cinematographically, ten to fifteen minutes after an intravenous injection.

The applications of this peristaltic hormone in surgery are mainly in those conditions of intestinal paresis which follow operations on the intestine, and particularly where purgatives, castor oil included, bring no results. It is also indicated in all forms of stubborn constipation due to intestinal atony.

Pituitary Body.

The prevailing view that this is a secreting gland has never received my support, my own opinion, based on many facts which cannot be introduced here, being that both lobes constitute a nervous mechanism which, through a chain of nerve paths, controls, among others, the functions of the thyroid and adrenals. The fact remains, however, that pituitary extracts, as demonstrated by Rénon and Delille, of Paris, and others, are of undoubted therapeutic value in many disorders. Their effect I ascribe mainly to the wealth of adrenal substance—as shown by the chromaffin test—the neural lobe of the pituitary contains—a fact which accounts for the generally recognized similarity of its action to that of adrenal extractives. Yet, this action is more prolonged, a fact doubtless due to the controlling influence of the other components of the pituitary with which it occurs in very close organic combination.

[6] "Internal Secretions," vol. ii, p. 861.

[7] Berl. klin. Woch., Nu. 46, 1908.

Suggestive also in this connection is the fact that it is likewise in paralytic distention of the intestine that, in so far as the surgeon is concerned, pituitary gland has proven of considerable practical value. Like adrenalin, it enhances the contractile power of the heart, along with that of the muscular coats of the intestine; but, instead of causing anuria through excessive constriction of the renal arterioles, as does adrenalin, it tends to increase diuresis. Bell[8] found it to be a reliable agent in intestinal paresis. Bidwell[9] also found it to exert a marked effect upon the muscular coats of the bowel, and that it overcame effectively the temporary paralysis due to exposure after abdominal operations, besides affording the patient increased comfort. The pituitary extract is given when the intestine begins to distend, intramuscularly in 15-minim doses, repeated in an hour if required. A liquid extract termed "vaporole," available in hermetically sealed containers, is very convenient for this purpose. There is also a dry "infundibular extract" prepared from the posterior lobe, which is to be diluted in eight or ten times the same quantity of water, and given intramuscularly in 3- to 15- minim doses.

I could prolong the list of animal extracts which have been tried in various disorders which the surgeon is apt to meet; but apart from those to which reference has been made, and perhaps a few others, many have so far failed to show sufficient practical value to warrant your confidence.

In closing, I wish again to emphasize the personal belief that there are not as many internal secretions, hormones, and other physiological products of this class as one is led to suppose by the literature of the subject. The day will come, I am confident, when it will be found that four or five internal secretions will explain all the phenomena now credited to many more, thus affording a solid foundation for their intelligent use in practice.

Summarizing all the facts submitted, the newer features of the subject which seem to me to merit your attention are as follows:—

1. Thyroid (including parathyroid) preparations, owing to their power to increase the opsonins and enhance the germicidal and antitoxic power of the blood, are indicated in surgical diseases, septicemia, pyemia, erysipelas, etc., and in suppurative processes wherever situated, the organs of special sense included.

2. Being endowed with the property of enhancing calcium metabolism besides acting as stimulants of the defensive process, thyroid preparations are also indicated in diseases of the osseous system (including those due to the tubercle bacillus in the spine and hip-joint) : osteomyelitis, rachitis, etc.

3. Thyroid preparations are also indicated in those cases of larval myxedema in which convalescence after operation is slow and the tendency to infection is great owing to inefficiency of the patient's defensive mechanism.

4. The fact that the parathyroids are the main source of opsonins, and that the latter increase the activity of the defensive process, emphasizes the

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[8] Brit. Med. Jour., Dec. 4, 1899.

[9] Clinical Journal, Sept. 6, 1911.

importance of always conserving these organs when removing the thyroid, or of restoring them at once after their accidental removal.

5. The adrenals, as coworkers of the thyroid apparatus in the defensive process and in sustaining oxidation, metabolism, and nutrition, seem to offer a new clue to the pathogenesis and treatment of cancer that is worthy of further inquiry.

6. The adrenal secretion, especially when obtained from regions in which it occurs in organic combination, the stomach, the spleen, and the pituitary for example, powerfully excites, as hormone, the contraction of unstriped muscular tissue. Hence the activity of the splenic hormone and pituitary body in postoperative paresis of the intestine and cardiovascular adynamia.

Cyclopedia of Current Literature

ALUMINUM ACETATE, USES OF.

The value of aluminum acetate solutions applied externally in various local inflammatory conditions is emphasized by the author. He has found them distinctly superior in their beneficial effects to more widely used agents such as iodine, ichthyol, phenol, mercury bichloride, lead and opium, and heat and cold. He used the solution of aluminum acetate of the National Formulary, which consists of aluminum sulphate and acetic acid, of each, 300 grams; calcium carbonate, 130 grams, and distilled water, 1000 c.c. The solution when prepared should be perfectly clear. It contains 7½ to 8 per cent. of basic aluminum acetate, and should be diluted with distilled water, 1 to 7 or 10. Gauze in several thicknesses is saturated with it, applied directly to the parts and covered with rubber tissue or oiled silk; a loose roller bandage is then applied. Such dressings remain moist and need not be changed more than once or twice in twenty-four hours. When they are removed the skin is found whitish and wrinkled. (This may be largely obviated by adding to the solution one-fourth its bulk of alcohol or glycerin.)

The author has used this solution with great satisfaction in treating boils and carbuncles, facial erysipelas, threatened alveolar abscess, infected wounds, rhus poisoning, and articular rheumatism. No bad effects were ever observed. H. H. Stansbury (American Journal of Surgery, February, 1912).

BLOOD-COUNT, EFFECTS OF SALVARSAN ON THE.

These effects were carefully studied by the authors in 8 cases. Counts were made before salvarsan injection, two or three days after the injection, and again on the thirteenth to the fifteenth day. The authors found that at the second count the red cells had diminished in 5 of the 8 cases, but that at the third count an increase had taken place in 7 instances. This increase in 1 case (after two injections of salvarsan) amounted to 2,450,000; it averaged 500,000 to 1,000,000. The white cells, contrary to expectations, showed a diminution in 1 case amounting to 3700, at the second count. In 2 cases only did the white cells return to normal by the fifteenth day; in these there was a slight increase above normal—200 and 1000 respect-

ively. The differential leucocyte count was but little altered; the mononuclear cells seemed to take a greater part in the leukopenia than the polymorphonuclears. The authors conclude that salvarsan would seem to exert a beneficial effect upon the anemia of syphilitics, in addition to its spirillocidal action. In a case of breast cancer (included in the 8 under investigation), the red cell count was lowered by the remedy. The effect on the white cells was not such as would lead to expect the production of a beneficial leucocytosis by it in infective disorders, medical or surgical. It should be tried, however, the authors think, in certain severe cases of septicemia, especially where there is marked anemia. L. Thévenot and E. Brissaud (Progrès médical, January 20, 1912).

EPIDIDYMITIS, TREATMENT OF GONORRHEAL.

When a gonorrheal patient complains of tenderness over the point where the cord passes through the external ring, he should be ordered to bed at once and the scrotum supported by a broad strip of adhesive stretched over the anterior surfaces of the thighs. Many an attack of epididymitis may thus be avoided, the vasitis which is the cause of the tenderness mentioned then subsiding.

Epididymitis ensues a day or two after the onset of vasitis. The scrotum should here likewise be supported upon the adhesive plaster bridge. Poultices applied to the scrotum give marked relief, but ice applications are to be avoided, as gangrene may follow their use. The following ointment, to be smeared on a cloth and applied to the scrotum, has given the author good results:—

℞ Mentholis, gr. xv (1 Gm.).
Ung. belladonnæ, gr. xx (1.3 Gm.).
Ung. Credé, gr. xxx (2 Gm.).
Ichthyolis, ʒj (4 Gm.).
Petrolati, q. s. ad ʒj (32 Gm.).—M.

The swelling subsides in about ten days, often leaving an indurated nodule of the size of a pea at the lower or upper pole of the epididymis. Although this nodule does no harm, unless it is so located as to obstruct the orifice of the vas, it is often a source of anxiety to the patient. It may gradually disappear, but in case it persists and the patient desires its removal the scrotum may be opened and a criss-cross incision of the tunica albuginea made over it. This maneuver is almost invariably successful.

If the swelling of the epididymis does not quickly resolve, the testicle should be strapped, as follows: Envelop the affected half of the scrotum in a square of gauze. Encircle the upper pole of the testicle with the thumb and index fingers, pressing the testicle into the bottom of the scrotum, and bind a strip of adhesive above the organ so tightly that it cannot slip through. Starting at this so-called "choker," pass strips of adhesive around under the testicle to the opposite side of the choker until the entire organ is covered, then apply a second choker over the ends of the strips. When strapped, the size of the testicle rapidly diminishes, necessitating the renewal of the strapping every second day. The strapped testicle should be supported by a suspensory. C. W. Bethune (Buffalo Medical Journal, November, 1911).

FEMUR, TREATMENT OF FRACTURE OF NECK OF.

After describing in detail the method of applying the extension apparatus in

cases of this variety, the author states that he has found the following method effective in controlling eversion of the foot: A medium-sized pillow is thinned out along one of its edges, and this thin edge slipped under the limb, reaching nearly down to the heel. The inner edge is then securely pinned to the bandage supporting the extension straps, from the heel up to above the knee, and the pillow rolled firmly against the limb and similarly pinned at its outer edge. A firm roller bandage 4 or 5 inches wide is put around the pillow and limb. If the pillow is well adjusted, the heel will be raised a little and a pressure slough in this situation thus prevented. Finally, a smaller pillow is placed under the knee in the popliteal space and fastened securely to the larger pillow. This avoids the swelling, pain, and stiffness which would otherwise appear at the knee, owing to sagging of the popliteal space. If all this has been skillfully done, no change in the arrangement will be necessary during the entire care of the case. D. M. Totman (New York State Journal of Medicine, December, 1911).

GLANDULAR TUMORS, TREATMENT OF MULTIPLE.

The author discusses more particularly the value of the Röntgen rays in the treatment of glandular enlargements. He groups together enlargements due to tuberculosis, Hodgkin's disease, lymphosarcoma, etc., calling attention to the fact that, in a general way, the same measures of treatment are applicable to all, and that the differential diagnosis is never absolute until the case has come to operation or autopsy. Radiation he considers indicated in all glandular tumors reaching any size, unless produced by an acute inflammatory process. The end-results, however, are better in tuberculous adenitis than in any other form. No one should hesitate to adopt this method as a routine procedure in tuberculous cases that do not readily respond to medical treatment. In early cases medical treatment can be combined with the X-rays. But it must not be pushed too far. Where a gland breaks down it should be incised and drained. An excellent method is to swab out the cavity with equal parts of iodine and phenol. It is best in such cases to give daily irradiations, to get the disease promptly under control. The average case will not derive much benefit until about ten radiations are given. Then treatment, as a rule, should be given two or three times a week. It is necessary to make each case an individual study and vary the dosage in order to produce the desired result. At the end of three weeks the skin usually becomes slightly red, and the mass diminishes in size. Patients thus treated early can be cured without the breaking down of a single gland, thus entirely avoiding scarring.

In Hodgkin's disease the glands respond more promptly to the X-rays than in any other affection, but the enlargements also recur more quickly. By renewing the treatment whenever recurrence is manifest, the external tumors can be controlled a long time, or until the patient succumbs to deep involvement.

In lymphosarcoma, if the patient has been referred before the glandular enlargement is too widely scattered, even if the mass has attained considerable size, the results are usually gratifying; in most instances the disease can be cleared up under radiation four or five times more intense than is required in Hodgkin's disease. Such intense radia-

tion tends to prevent metastases. If the skin is broken, however, the same results cannot be expected, as then deep metastasis takes place rapidly.

The beneficial effect of alterative doses of mercury, even in cases where lues can be definitely excluded, is frequently surprising. R. H. Boggs (Medical Record, December 23, 1911).

HOOKWORMS, DRUGS FOR THE EXPULSION OF.

Observations were made under the supervision of the author to ascertain the efficiency of various drugs in removing hookworms. A careful examination of the stools and enumerations of all hookworms expelled in each case were made. The subjects under observation were Indian immigrants into Natal, and numbered 83. Eucalyptus, izal, pelletierine tannate, thymol, and beta-naphthol were the drugs employed, each individual receiving repeated treatments with one of these until no more hookworms were expelled. The men were given a light meal of sago for their last repast on the day preceding treatment, and on the same evening an aperient consisting of 6 drams of magnesium sulphate. Thymol and beta-naphthol were each given in 3 doses of 30 grains each at intervals of two hours, followed, again in two hours, by 6 drams of magnesium sulphate. These two drugs proved about equally effective, the proportion of hookworms expelled by the first treatment being, respectively, 97.87 and 97.52 per cent. The thymol treatment, however, using a total of 90 grains of the drug, was found to cause a serious constitutional disturbance. Stimulation of the nerve-centers was at first evident, the individual being excited and talkative, and the pulse and respiratory rates quickened. Subsequently dizziness and drowsiness were complained of, and if the patient was not kept recumbent some syncope might be exhibited. Under the 90-grain beta-naphthol treatment two of the men merely complained of slight nausea and a sensation of warmth in the epigastrium. There was no excitement or exhilaration, and faintness never developed to any alarming extent. The author considers that beta-naphthol is equally as effective as thymol, but is superior to it in causing comparatively little general disturbance, and in costing much less. A 60-grain beta-naphthol treatment also proved fairly effective, the first treatment expelling 86 per cent. of the parasites present. This drug was given in the following form: Beta-naphthol, 4 drams (16.0); mucilage of tragacanth, 1 ounce (32.0); peppermint water, to make 6 ounces (192.0). The beta-naphthol was first carefully triturated and the mucilage and water then added, the resulting mixture containing the drug in suspension.

Oil of eucalyptus, given in the dose of 2.5 Gm. (38 grains) along with chloroform and castor oil, expelled 74.2 per cent. of the parasites at the first treatment; izal, given in 4-dram doses with chloroform water, expelled 90 per cent., while pelletierine tannate, given in 12-grain doses, proved absolutely inert, not a single hookworm being expelled by two doses from 10 men in whom beta-naphthol subsequently led to the expulsion of numerous parasites. Burton Nicol (Journal of Tropical Medicine and Hygiene, January 1, 1912).

INFANTILE TETANY, DIETETIC TREATMENT OF.

By a careful study of the relation of diet to infantile tetany in 4 cases, the

author was able to confirm the statement made by Finkelstein to the effect that some substance dissolved in the whey of milk acts harmfully in tetany. Referring to one of his cases, the author states that "with surprising regularity" the tetany became worse or better, according as the whey was added to or withdrawn from the food, and this regardless of the quantity of food and of its content in fat and sugar. He concludes, therefore, that there is in the whey some material which acts in an irritating manner, producing an increase of the irritability of the peripheral nerves. The removal of whey from the food gives a diet which is non-irritating in these cases, but which frequently must be supplemented with sedatives in order to bring about a proper reduction of the spasmophilic condition.

The curds of milk from which the whey had been removed did not seem to have any irritating power in the author's cases. He, therefore, fed the children afflicted with tetany with a suspension of these curds, which was found to be most satisfactorily prepared as follows: The milk is brought to a boil and then cooled to 107° F. Chymogen, a teaspoonful to the quart, is added and the temperature kept at 107° F. for half an hour. The milk is then strained through a cheese-cloth and allowed to drain for one hour. The curds are finally put through a sieve with fine mesh, and suspended in a solution of arrowroot flour of the strength of one level tablespoonful to the quart. C. G. Grulee (Archives of Pediatrics, January, 1912).

INTESTINAL THERAPEUTICS, AGAR AS A VEHICLE IN.

In intestinal disturbances it is advantageous to apply a remedy that will cover a large area before being absorbed. This can be conveniently accomplished, the author finds, by using agar as a vehicle. Fluid is then first absorbed by the agar and the medicinal substance later liberated through osmosis. Another advantageous property of agar is that of retaining fluids and thus increasing the bulk of and also partly softening the feces. In constipation, agar impregnated with a laxative remedy will thus increase the efficiency of the latter. In diarrhea it may also be profitably utilized. Where the intestinal mucosa is inflamed or ulcerated, the constipation induced by astringent remedies, with or without opiates, may be more harmful than the primary diarrhea, owing to the formation of hard scybalæ. If, however, the astringent is given in agar, these bad results are obviated. In neurotic disturbances of the intestine, such as enteralgia, agar may similarly be made to carry a sedative and impart it to a large area of the affected organ.

In the preparation of medicated agars the medicinal agent is dissolved in a boiling agar water solution, thoroughly mixed, then the solution evaporated to the original dry agar volume. The agar is then ground up into flakes. The following agar preparations—the amount of medicinal agent named after each being that contained in each level teaspoonful (1 gram) of the finished product—have been used by the author: Phenolphthalein-agar, 0.03 Gm. (gr. ½); rhubarb-agar, 1 c.c. (ɱxvj) of fluidextractum rhei; calumba-agar, 2 c.c. (ɱxxxij) of fluidextractum calumbæ; gambir-agar, 2 c.c. (ɱxxxij) of tinctura gambir comp.; tannin-agar, 0.03 Gm. (gr. ½); simaruba-agar, 1 c.c. (ɱxvj) of tincture of simaruba; myrtle-agar, 1 c.c. (ɱxvj) of tincture of myrtle; ipecacuanha-agar, 1 c.c. (ɱxvj) of tinc-

tura ipecacuanhæ; sumbul-agar, 1 c.c. (mxvj) of fluidextractum sumbul. Of phenolphthalein- and rhubarb- agar, one teaspoonful twice daily, after breakfast and supper, in some water, is the average dose in constipation. Calumba-agar, one teaspoonful three times daily, proved valuable in cases of colitis with mucus in the stools. The next four preparations mentioned were useful in diarrheal states, myrtle-agar being employed also in diabetes mellitus, especially if complicated with enteritis. Sumbul-agar was used in a number of neurotic intestinal disturbances, seemingly with good results. Max Einhorn (American Journal of the Medical Sciences, February, 1912).

LARYNGEAL MEDICATION, SIMPLE METHODS FOR.

There are two simple methods, according to the author, of bringing remedies in contact with the laryngeal mucous membranes. The first consists in having the patient throw the head strongly backward, open the mouth widely, and gargle with some remedial fluid. The writer was able to satisfy himself by observation with the laryngoscope that fluid thus gargled will reach the adducted vocal cords in many instances, though in some persons the fluid will not descend as far. Another plan which he has found useful is to introduce the medicinal fluid by the nasal route, and allow it to trickle down to the throat. If the swallowing reflex is voluntarily arrested when the fluid enters the laryngoesophageal space it is certain to run into the larynx when the patient continues to breathe regularly, as the walls of the esophagus remain in contact. By using in this way a mixture of oil of sweet almonds, 20 parts, and oil of eucalyptus, 1 part, with enough methylene blue added to impart a decided coloration, the author was able to see the epiglottis and the cavity of the larynx colored blue, showing that the preparation had entered at least as far as the vocal cords. These two methods are likely to prove useful to practitioners who have had no training in laryngology on occasions when local treatment of the larynx is necessary. Lavrand (Journal des sciences médicales de Lille; Revue de thérapeutique médico-chirurgicale, March 15, 1912).

MALARIA, A PATHOGNOMONIC SIGN OF.

The author refers under this title to the presence of malarial pigment in the urine. He found that every malarial subject eliminates with his urine an enormous quantity of blood-pigment, which is more readily discoverable in this emunctory than in the blood itself. The urine, gathered in a clean tube, is shaken and centrifugalized for five minutes; then a drop from the bottom of the tube is examined under a high power. The pigment appears (both in the urine and blood-plasma) under four forms: (1) very fine granules, almost always grouped; (2) somewhat larger granules; (3) large polymorphous masses, of varying size; (4) granules inclosed in hyaline plaques or on leucocytes. Besides the granules of black pigment there are also to be found grains of blue pigment, either inclosed in hyaline plaques or in epithelial cells from the bladder. These are very sparsely distributed (one to three in each preparation), but by persevering one can always find them. One occasionally finds also masses and grains of yellowish pigment; these are already well known.

In many diseases other than malaria

the microscope reveals in the urine and blood translucent yellowish masses, dotted with granules or lumps of a black, red, or sepia color. Some of these granules or lumps break loose from the inclosing masses and float freely in the preparation, where they might be mistaken for the malarial pigment; but they do not have the Chinese-ink-like, intense blackness of the latter. Moreover, in changing the focus of the microscope slightly, a yellowish color appears around their borders owing to adherent fragments of the yellow transparent mass to which they had been attached. Besides, they are not as abundant as the true masses of blood-pigment. C. L. Urriola (Interstate Med. Jour., Jan., 1912.)

PAROXYSMAL TACHYCARDIA, TREATMENT OF.

The author reports the case of a woman who had been suffering from attacks of paroxysmal tachycardia for five years, and in whom, at the last attack, relief was obtained in the following way: The patient came to the office complaining of a rapid heart; a count of the apical systoles showed the rate to be 220. The author seated himself in front of the patient, and, placing his right hand flat over the heart and his left on the patient's back, directed her to take a deep breath, close her glottis, and fix strongly the walls of her chest. He then squeezed the chest walls with some force, attempting to exert some pressure on the upper part of the heart. Instantly the patient expressed relief, and the pulse was found to be 110, whereas fifteen seconds before it had been 220. After resting a few minutes the patient went home, entirely relieved.

Such attacks are probably due, according to the author, to an occlusion of one or more cardiac blood-vessels, secondary to fibrosis of the "primitive cardiac streak." It seems not improbable that a squeeze of the heart at such a time might reopen the occluded vessel or vessels and re-establish the normal circulation, with consequent relief. If this explanation proves valid, the method would be worth trying in early cases of angina pectoris. H. M. Rich (Journal of the American Medical Association, February 24, 1912).

PINEAPPLE JUICE IN ANOREXIA.

The author administered fresh pineapple juice to 150 cases in which anorexia was a symptom, including patients with simple anemia, convalescents from malaria, nephritis, pneumonia, typhoid fever, acute and chronic gastritis, and pulmonary tuberculosis. In chronic diseases of the stomach in general, especially in alcoholic cases, the juice was productive of considerable benefit. In gastric and duodenal ulcer, however, it was not well borne. In nephritis the juice proved useful after the acute attack had passed off, and in tuberculous cases with anorexia it was also of assistance. In anorexia following attacks of acute hepatitis, hepatic colic, and acute cholecystitis, as well as in chronic liver and gall-bladder cases, the juice materially improved the appetite. In the chronic cases the feces, previously scanty, containing much macroscopic undigested food and having a light color, were considerably altered and improved; upon omitting the juice temporarily they returned to their former condition. In a number of neurotic patients seemingly unable to eat, improvement after administration of the juice was quite apparent, though mention had not been made as to the probable effect expected from the remedy. S. Floersheim (Dietetic and Hygienic Gazette, February, 1912).

PITUITARY EXTRACT IN OBSTETRICS.

After using intramuscular injections of pituitary extract in a large number of cases the author concludes that the best time to administer the drug, in the first stage of labor, is when the os is a little less than the size of the palm, in primiparæ, and when it will just admit two fingers, in multiparæ. If given at a time when pains have not yet appeared its effects are but temporary and ineffective. But if given later, its action, which begins to show itself in three minutes, induces powerful, frequently repeated uterine contractions for about ten minutes; during this time the uterus remains in partial contraction in the intervals between pains. Later, the effect gradually diminishes, disappearing in an hour. The power of the contractions induced by full doses is shown in that the fetal heart rate may be more or less markedly reduced.

Employed in the period of expulsion of the fetus, pituitary extract, according to the author, will in many instances render the application of forceps unnecessary. Its use is clearly indicated in secondary uterine inertia and in cases where, owing to undue enlargement of the uterus because of hydramnios or twin pregnancy, the pains are ineffective. In febrile states it may also be employed. Where complications are expected after the birth of the child, an injection of pituitary extract a few minutes before the end of the second stage is to be recommended. On the other hand, if the birth of the child does not take place until about an hour after the injection, a possible hemorrhage is to be feared, and the patient must be closely watched. F. Jaeger (Münchener medizinische Wochenschrift, February 6, 1912).

Another observer writes concerning the effect of pituitary preparations (pituitrin in particular) in the early months of pregnancy, when, in the treatment of cases of abortion, local intervention in the form of curettage is considered inadvisable, and a remedy is desired which will limit absorption by firmly contracting the uterine wall and tend to expel the fetal remains. He found that, because of the less irritability of the uterus early in pregnancy, the results of pituitrin injection were much inferior to those obtained later, and were no more certain than those of ergot or of hot and cold vaginal douching. L. Hell (Münchener medizinische Wochenschrift, December 12, 1911).

PNEUMONIA, QUININE AND UREA HYDROCHLORIDE IN.

The author reports 192 cases of lobar and lobular pneumonia, including both hospital and private cases, treated with intramuscular injections of quinine and urea hydrochloride. The mortality was only 12 per cent., although mild cases in which decisive therapeutic intervention seemed unnecessary were not given quinine and hence do not figure in the series. Many of the patients admitted very late and in bad condition were, on the other hand, given quinine, usually with noticeably good results.

The initial dose used by the author is 1 to 1.6 Gm. (15 to 25 grains), regulated somewhat according to the temperature. This is followed in three or four hours by a second injection, and perhaps by a third and even fourth injection within the first twenty-four hours. The same plan is pursued on the second day of treatment and on the third, if necessary. Usually from 6 to 10 Gm. are given in from forty-eight to sixty hours. After that, smaller doses (5 to 10 grains—0.3 to 0.6 Gm. daily) are sometimes continued by the mouth. Cinchonism does

not develop. Temperature and pulse rate fall gradually and proportionately, and respiration more rapidly. Blood-pressure may at first decline with temperature and pulse, but often remains stationary or increases. The complete clinical picture, objective and subjective, is favorably changed. Crisis does not occur, the termination being by lysis at about the ordinary time, five to twelve days. The only critical phenomenon observed, and this but rarely, is slight perspiration. Percussion and auscultation signs are uninfluenced by the quinine. The structural pathological processes appear to evolve in the customary manner. The most striking results are thus functional. In the author's opinion, the effect of the drug is chemical and antitoxic, though it may act, in part at least, as a direct stimulant to the autonomic cardiorespiratory centers.

In addition to the quinine salt the usual hygienic and therapeutic measures were provided for the author's patients. In a number of cases saline infusion was used. Sodium bicarbonate or ammonium compounds were given in sufficient quantity to keep the urine alkaline throughout the course of the attack, and this seemed to be of benefit. Following Galbraith's plan, tincture of ferric chloride was given when the quinine was withdrawn.

In making the quinine injections, the syringe was filled with a 50 per cent. solution of the quinine and urea salt in sterilized water, and the needle inserted deeply, through skin previously painted with tincture of iodine, into a muscle. The syringe was emptied thoroughly, to avoid the dropping of solution upon the skin when the needle was withdrawn. The point of puncture was sealed with iodoform-collodion. Thousands of injections were thus made without any ill result. Solomon Solis-Cohen (American Journal of the Medical Sciences, January, 1912).

PREGNANCY AND LABOR, MANAGEMENT OF APPENDICITIS IN.

During the first three months of pregnancy the treatment of appendicitis should be the same as in the non-pregnant state; but if immediate operation is not performed and the patient is carried through the attack without removal of the appendix this should be done soon afterward, since the danger of recurrence later in pregnancy at a more unfavorable period is great. After the third month the treatment should be immediate removal of the appendix as soon as the diagnosis is made, since the high mortality of this complication is due to delay. This applies especially to the later months, when, due to the greater congestion and increased intra-abdominal pressure, the inflammatory changes are apt to be very marked, with easy perforation. The indication for operation applies to the mild cases as well as the severe ones, and no plan of delaying to determine the severity of the attack is justifiable.

If an attack of appendicitis comes on during labor the uterus should be emptied without much delay and then the appendix removed. If the attack comes on before labor, even if at full term, the uterus should not be emptied until after the appendix has been removed or the abscess drained if pus has developed. If general peritonitis is already present the uterus should first be emptied by the vaginal route by a rapid method, and the abdominal operation then performed.

The same necessity for prompt interference holds good when symptoms of

appendicitis appear during the puerperium. In a large percentage of cases the exacerbation is due to the breaking of adhesions or rupture of a pus sac by the sudden decrease in size of the uterus. A. H. Bill (Cleveland Medical Journal, August, 1911).

PUERPERAL INFECTION, OUTDOOR TREATMENT OF.

In the experience of the authors, outdoor treatment reduced the mortality of severe puerperal infections by nearly 20 per cent. Of cases treated indoors, 95 followed labor at term and 42 miscarriage, with a respective mortality of 42.2 per cent. and 50 per cent.; of those treated outdoors, 96 followed labor at term and 37 miscarriage, with a death rate of 19.8 per cent. and 34 per cent. respectively. The patients were kept out of doors on a wheel bed which could be moved into the ward whenever attentions of any kind were necessary. Sunlight seemed to be quite as important as air, and, except in very hot weather, the patients were placed directly in the sun. The majority improved rapidly. The pallor disappeared, appetite improved, flesh and strength increased, and they became deeply tanned. The effect on temperature was not immediate, but gradual, as the patients' resistance increased. The most striking results were seen in the prolonged pyrexias, where after several weeks of high temperature the general condition was wonderfully maintained. The authors conclude that the outdoor treatment is the most effective known at present for puerperal infections. It probably exerts its action chiefly by increasing the amount of hemoglobin in the blood.

Among the other measures used, iron and arsenic were valuable adjuncts. Strychnine was given as a stimulant to vascular and nervous systems. Alcohol increased the appetite and stayed the loss of flesh in protracted fever. Fluids were supplied copiously by mouth, and in severe cases salt solution was given by rectum to increase the urinary secretion and aid elimination of toxins. Alcohol and cold sponge baths were used for pyrexia, and hot or cold application to relieve abdominal pain and distention.

Curettage is contraindicated in puerperal infection, because it increases the mortality nearly 10 per cent. A single intrauterine douche of sterile salt solution should be the only local treatment, and some writers deny the value of even this. Antistreptococcic serum and vaccines have not proven of much value. E. B. Young and J. T. Williams (Boston Medical and Surgical Journal, March 14, 1912).

RHEUMATOID ARTHRITIS, THYROID THERAPY IN.

After prolonged observation the author is inclined to believe that very few cases of long-standing arthritis exist without some degree of thyroid failure. There can be little doubt that rheumatoid arthritis (including both osteoarthritis and chronic infectious arthritis) is the result of chronic toxemia following an original acute condition in the majority of instances. L. J. Llewellyn prefers to speak of it as a chronic cerebrospinal toxemia. In the early stages some or all of the following symptoms may occur: Changes in skin pigmentation; patches varying from a lemon color to brown; spots like bruises occurring spontaneously; occasionally white spots; vasomotor disturbances; perspiring hands and feet, or paroxysmal perspirations of other restricted areas; rashes; local anemias or asphyxia; shooting pains; muscular cramps; paresthesias; neuralgic

headaches; gradually increasing flat-foot; muscular weakness; morning stiffness, etc. These symptoms may precede any noticeable arthritis.

The poisons that are affecting the system as a whole may damage the thyroid, and, although at first there may be excessive secretion of this gland, sooner or later more or less failure occurs, and then is the time to begin giving thyroid extract in some form.

Care should be taken to distinguish between thyroid failure and failure of the pituitary body. The former is associated with a slow pulse, the latter with a frequent pulse. In either case the patient may be puffy and lethargic. In simple obesity, on the other hand, patients are often bright mentally and active physically.

As to diet in rheumatoid arthritis, meat, speaking generally, should be eaten; but if the thyroid function is imperfect, meat becomes dangerous unless sparingly taken.

It does not follow that because a patient is emaciated there is no failure of the thyroid gland. In some very thin patients the skin can with difficulty be pinched up, the subcutaneous tissue being much thickened and the skin tense. Sometimes a condition of actual scleroderma exists.

It is best to give a small dose of thyroid at first. For some patients the author prescribes as little as 1½ grains (0.1 Gm.) once daily. Such a dose as 5 grains (0.3 Gm.) three times a day is to be reserved for distinctly myxedematous cases. The drug should not be pushed to the extent of causing headache and diarrhea,—all the more since these patients lack resisting power and cannot withstand the toxic effects of excessive doses. As a precaution it is well to allow a few days' interval from time to time in any case. The pulse should be watched, and if blood-pressure records are not obtainable any undue fall should be noted by the trained finger.

Thyroid treatment in chronic arthritis is, of course, merely an adjunct, and cannot be depended upon alone to deal successfully with the disease. Septic foci should be looked for and dealt with, and the author believes that in these cases all teeth should be removed, since few are healthy. Teeth may be responsible for much gastrointestinal catarrh even when there is no actual pyorrhea.

In cases where thyroid failure has become thoroughly established, it is necessary for the patient to take thyroid in suitable doses for the rest of his life. W. J. Midelton (Practitioner, January, 1912).

SALVARSAN, ELIMINATION OF FEBRILE REACTIONS AFTER.

The authors have recently been using freshly distilled water for the preparation of salvarsan and normal saline solutions, and have confirmed the assertion made by Wechselmann that the febrile reactions occurring shortly after intravenous injections of salvarsan can be avoided in this way. They present a table showing 20 patients who received solutions prepared by both methods, the old and the new. With the former method, *i.e.*, using solutions prepared with old distilled water, there were 48 febrile reactions (over 99° F.) in a total of 53 injections. With the freshly distilled water, 45 out of 56 injections were followed by absolutely no rise of temperature or other unpleasant symptoms; in all instances with a temperature over 99° F., the reactions could be accounted for either by water or saline not absolutely fresh or by a febrile condition of the patient. There was a striking absence

in all these patients of nausea, vomiting, diarrhea, headache, general malaise, and herpes. In tabetic patients, 7 out of 8 injections by the old method were followed by lightning pains, while with the freshly prepared water there were no pains in 9 cases. As two slight reactions were noted with water prepared only a week before the injections, it is probably safest always to use the water as fresh as possible.

The explanation of the febrile reaction with old distilled water is not entirely satisfactory. Wechselmann ascribes it to saprophytic organisms contained in water which has stood for some time. Proteid matter is dissolved out of these in the water, passes through the filter, and enters the system at the time of injection. H. F. Swift and A. W. M. Ellis (Journal of the American Medical Association, December 23, 1912).

SEX CHARACTERS, INFLUENCE OF DUCTLESS GLANDS UPON.

The adrenal cortex and medulla have a different development and, according to the author, different functions; the former is especially connected with growth and sex characters, the latter with blood-pressure. The enlargement of the adrenal cortex during breeding, pregnancy, and after castration and the small size in deficient sexual development are additional evidence of the association of the cortex with sex characters.

Adrenal hypernephromata are associated with sex abnormalities almost invariably in children, usually in adult females before the menopause, but apparently never in adult females after the menopause, or in adult males. Hyperplasia and hypernephromata of the adrenal cortex in females are usually associated with a diminution of certain female and a development of male sex characters. The converse rarely occurs. The only condition in which some female sex characters are constantly acquired in males, or male sex characters fail to develop, is after castration performed before puberty, and sometimes in acromegaly. Premature development of female sex characters in females may occur with certain ovarian tumors, and of male sex characters in males with certain tumors of the pineal gland, the adrenal cortex, and the testicles.

The functional association of the adrenal with the pituitary and other ductless glands, and the appearance of certain sex abnormalities in acromegaly and pineal tumors, indicate that a true solution of the connection between the adrenal cortex and sex will only be found when the interrelationships of the various ductless glands are better understood. E. E. Glynn (Liverpool Medico-Chirurgical Journal, January, 1912).

SPLANCHNOPTOSIS, MECHANICAL TREATMENT OF.

A simple and effective method of securing adequate support for the viscera in Glénard's disease is described by the author. A strip of zinc oxide adhesive plaster 2 or 2½ inches wide and about 5 or 6 inches long is placed transversely across the extreme lower abdomen, the hair having previously been shaved clean. To each end of the adhesive is attached a bandage of about the same width, long enough to reach around the body above the iliac crest and be fastened behind. Loosening of the ends of the adhesive through the traction exerted by the bandage can be prevented by a narrow vertical strip of adhesive placed over each end. The bandage is well padded with cotton, either folded within it or applied to the body immediately beneath. This arrangement permits of

easy adjustment to the required degree of tightness, and, in particular, avoids the skin irritation caused by adhesive carried firmly around the body. By means of the fixed point of support in the lowest zone of the anterior abdomen, the pressure is applied exactly where it does the most good. Some irritation beneath the plaster is produced at first; but by occasionally removing it, cleansing the skin, and using a dusting powder for twenty-four to forty-eight hours, the irritation will be overcome, and the strap can finally be used continuously.

The fact is emphasized by the author that mechanical support is only an auxiliary in the treatment of splanchnoptosis. Fundamental defects in the musculature, lack of tone in visceral supports, imperfect circulation and innervation, together with the neurasthenic state so often associated, must all be therapeutically met. Massage, electricity, appropriate treatment of the gastrointestinal tract, prolonged mechanical support, with correct living and suitable diet, constitute the most effective measures. G. W. McCaskey (Journal of the American Medical Association, October 28, 1911).

SUPRARENAL GLANDS, PATHOLOGICAL DATA ON.

In the course of 310 autopsies the author found pathological changes in the adrenals in 13 per cent. of cases. The lesions present in these organs included hemorrhage, 1; carcinoma, 2; tuberculosis with caseation, 9; adenoma, 12; adrenals fibrosed, gelatinous, or fatty, 16. The author concludes that atheroma of the aorta does not seem to bear any constant relation with changes in the adrenals. Studies, however, for the purpose of determining precisely the relationship existing between the condition of the adrenals and the final lowering of blood-pressure in former cases of hypertension would seem advisable and promising. E. Pallasse (Provence médicale; Progrès médical, March 9, 1912).

TUBERCULOSIS, TREATMENT OF COUGH IN PULMONARY.

In discussing this subject the author states that a discrimination must be made between cough that empties the bronchi and cavities of accumulated secretions, etc., and that cough which is the result of irritation, unaccompanied by expectoration, exhausting, despoiling sleep, and making it impossible for the patient to keep food on his stomach.

The first type, illustrated by the early morning cough, but which may occur at other times during the day, should be facilitated by giving the patient a glass of hot water or milk with or without a teaspoonful of whisky or brandy, or 5 or 10 grains of sodium bicarbonate, or a little Saratoga Vichy.

The other type—the useless cough—may arise from excessive irritation of the bronchi, pharynx, or larynx, or from pleurisy, and should be combated. Singing, laughing, rapid talking or walking, dust, smoke, and other irritants should be avoided. Discipline, in the way of controlling the desire to cough, is often rewarded by much amelioration. Deep breathing exercises, change of position in bed, sucking ice, sipping orange juice, demulcent lozenges, are among the more simple measures. If there is irritation of the pharynx, mentholated or slightly astringent lozenges, such as the following, may be of use:—

℞ Ext. krameriæ,
Potassii chloratis, of each, gr. xv (1.0).
Olei menthæ piperitæ, ♏j to ij (0.06 to 0.12).
Ext. glycyrrhizæ puri, ʒiiss (10.0).
M. et divide in trochiscos no. xxx.
Sig.: One as needed.

Mixtures with decided taste, such as the last, must be used sparingly, lest the stomach be upset or appetite impaired.

Inhalations of steam, which may be medicated by adding compound tincture of benzoin or oil of pine, a teaspoonful or two in a pitcher of hot water, and inhaled through a paper funnel or from a croup kettle or similar contrivance, are also useful. A good inhalation, especially where bronchial secretions are abundant, is one composed of equal parts of alcohol, creosote, and chloroform, used by placing 10 drops on the sponge of the little perforated zinc mask known as a Robinson inhaler. It can be worn as much of the day as the patient desires.

For pharyngeal irritation sprays may also be tried, such as 1 per cent. menthol or oil of pine in benzoinol or albolene, or a mixture of equal parts of menthol, camphor, and oil of eucalyptus in 100 parts of benzoinol.

Night cough, important because preventing sleep, may be mitigated by a warm drink before retiring, seeing that the bed is warm, and by applying a chest compress as used in pneumonia or a cross binder. The latter is made of a roller of linen 5 to 10 inches wide and 3 yards long. It is wrung out of cold water (60° F.) and applied in the shape of a cross, beginning in the left axilla, in front over the right shoulder, down the back obliquely to the left axilla, across the chest in front, under the right arm up to and over the left shoulder, obliquely down to the right axilla and across the back, when it is pinned. Over this is put a similar roller, dry, and, outside both, a flannel jacket. This may be left on three hours and then renewed as it gets dry, or allowed to remain all night. The chest may then be washed in cold water and dried. Folded towels may be used for the roller.

Strapping the chest, when the cough is due to the pleurisy, is useful. Sometimes counterirritation over the apices or other site of irritation, by painting with tincture of iodine or applying blisters, providing there is no kidney irritation, is a legitimate measure.

For cough in which a nervous element is obvious, bromides in 10- to 20- grain doses at rare intervals during the day or on retiring, or chloral hydrate in 5-grain doses, or a combination of the two in smaller amounts may be efficacious. If there is much wheezing, and especially if much secretion, tincture of belladonna in doses of 10 to 20 minims or atropine sulphate, gr. $\frac{1}{100}$ to $\frac{1}{50}$, may be used; these also influence night-sweats. Codeine is perhaps the best drug, but the doses should be small and infrequent at first, gr. $\frac{1}{12}$, as sooner or later they will have to be carried up to $\frac{1}{8}$ or $\frac{1}{4}$ grain every two hours. Heroine in smaller doses may be used, but is not quite as safe. Morphine, as a last resource, should be begun at $\frac{1}{24}$ grain or as $\frac{1}{16}$ grain of some opium preparation, and then increased enough to give results. Necessity may compel its subcutaneous administration.

Expectoration may be influenced by respiratory exercises, change in position, the cross binder, and the inhalations already mentioned. If it is abundant, the inhalation of creosote and the use of atropine are the most promising measures. F. S. Meara (Southern Medical Journal, November, 1911).

Clinical Summary

Practical hints from articles and abstracts that have appeared in the Monthly Cyclopedia and Medical Bulletin during the current year.

Acne. TREATMENT. Vaccines useful for selected cases: (1) Cases with deep-seated pustules, occupying a large area; micro-organisms abundant, staphylococcus greatly predominating. Autogenous staphylococcic vaccine most efficient, but must be administered over some months. (2) Cases with lesions indolent and superficial, chiefly inflamed comedones, with but little pustulation. Stock acne bacillus vaccine here gives good results in many instances. Administer 5 to 10 millions acne bacilli every week or ten days. (3) Cases combining the more and less severe lesions of the first and second groups. Use mixed vaccines of staphylococcus and acne bacillus. Other measures: Remove other etiological factors, such as reflex circulatory disturbance due to nervous strain in adolescence and digestive disorders. Correct constipation and regulate diet and mode of life. Locally, squeeze out comedones and wash often and vigorously with soap and water; if suppuration present, puncture or incise pustules, bathe with hot water, and dress antiseptically; disinfect skin and have garment worn next to affected part frequently changed; X-rays; radium for indurated nodules. *Morris and Dore.* Page 93

Acne Rosacea. TREATMENT. Where acne indurata associated, incise papules and pustules, scarify distended nasal capillaries, and apply Bier's cup for some time to individual lesions. Have patient apply hot compresses freely to face and at night following ointment: Salicylic acid, 0.6 (gr. x); precipitated sulphur, 4.0 (℥j); white petrolatum, 30.0 (℥j). *Aronstam.* 176

Anemia, Pernicious. TREATMENT. Case in a pregnant woman at term in which 4 intragluteal injections of defibrinated human blood, amounting altogether to 159 c.c., proved markedly beneficial. *Esch.* 44

Appendicitis, Chronic. DIAGNOSIS. Pain chiefly in right lower quadrant, if unassociated with attacks of epigastric pain and nausea, is seldom due to appendix; before diagnosing chronic appendicitis exclude every other possible condition.

TREATMENT. Appendectomy alone frequently does not cure. This is true especially of patients with chronic constipation; a long, dilated cecum, with other evidences of enteroptosis, is usually present. *Stanton.* 33

Arthritis, Gonorrheal. TREATMENT. Intra-articular injections of iodine tincture, 5 Gm. on the average, used in many cases of various types, with considerable success. Increased swelling at first, then cessation of joint effusion, disappearance of pain, and return of motion. *Hildebrand.* 37

Arthritis, Rheumatoid. TREATMENT. 1. Liberal diet, including plenty of animal food. 2. Guaiacol carbonate in cachets; dose at first from 5 to 10 grains *t. i. d.*, to be increased by 1 to 2 grains each week up to 15 or 20 grains. If given long enough (at least twelve months) this will in many cases arrest disease, diminishing size of joints and permitting of increased movements; it relieves pain markedly. 3. Potassium iodide in 10-grain doses, combined with the guaiacol, increases benefit; its depressing effect to be counteracted by tonics. 4. Thyroid preparations are of value in early cases associated with Raynaud-like symptoms and cramps in extremities. 5. Hot baths, superheated air, or electric light; douche masssage; peat baths or brine baths. 6. Passive movements and massage. 7. Bier's hyperemia, where affected joints few. 8. Fibrolysin followed by massage, where joints more or less fixed owing to fibroid thickenings. 9. Irrigations of colon, where arthritis secondary to chronic colitis. *Luff.* 112

Asthma, Bronchial. TREATMENT. Importance of chronic coprostasis and intestinal autointoxication in etiology of asthma shown. Necessity of bowel regulation in the treatment emphasized. *Ebstein.* 33

Epinephrin hydrochloride found most effective drug next to morphine in treatment of the asthmatic paroxysm in 31 cases. Ten to 15 drops of 1:1000 solution injected under or into skin give immediate relief, which is often also lasting. Blood-pressure not increased by it, but rather lowered. Stramonium cigarettes or fumes give comfort in some patients, hypodermics of nitroglycerin in but a few. Atropine safer but less sure than morphine, which should be last resort. Treatment between paroxysms: Remove reflex causes such as deflected nasal septum, sensitive point near inferior turbinates, disordered stomach, and constipation. Overcome obesity where present. Give prolonged course of potassium iodide, 10 to 15 grains (0.65 to 1.0 Gm.) three times daily, and thereafter alternate use of drug for 10-day periods with 10-day intermissions. *Lemann.* 94

Blepharitis. TREATMENT. Marginal blepharitis in children to be treated as follows: 1. Remove crusts 2 or 3 times daily with sodium bicarbonate solution (gr. x to f℥j) or, at first, with warm olive oil. 2. After careful washing rub into roots of lashes a stimulating mercurial ointment (gr. viij of ammoniated mercury or gr. iv of yellow oxide of mercury to ℥j of white petrolatum). 3. If much discharge, especially purulent, cutting of lashes will facilitate cleansing; in worst

cases, epilate all lashes involved in pustules. 4. If lid much excoriated, paint 1 per cent. silver nitrate solution on surface daily. 5. Keep lids closed with wet carbolic dressing (1 to 80) for a few days in severe cases, removing it *t. i. d.* to cleanse lids; avoid entrance of solution into eye. 6. Keep child from reinfecting lids with fingers by use of lightly smoked, domed protecting spectacles, or in the very young by cardboard splints bandaged on flexor surface of elbows. 7. Prescribe correcting glasses if required, to remove cause of ocular hyperemia. *Lawson.* Page 103

Cholera. TREATMENT. Potassium permanganate given internally with some success. Dose, 0.4 to 0.5 Gm. (6 to 7½ grains) *per diem*, dissolved in 400 to 500 Gm. of pure water and given every half-hour. Drug continued two or three days in diminishing doses. Especially valuable in cases with hemorrhage. Iodine tincture given in 42 cases, with 34 recoveries. Dose, 40 to 60 minims daily, dissolved in 250 Gm. of distilled water, given every hour. Copious bowel irrigations with warm iodine solution or 1:1000 potassium permanganate solution also used with benefit in violent cases. *Logothcti.* 35

Colitis, Mucous. TREATMENT. Apply to abdomen at night towel soaked in magnesium sulphate solution, ½ ounce to 1 pint of water, at 75° F. Irrigate rectum with 2 gallons of same solution at 85° to 90° F. Mucus disappears, and pain and gas formation diminish. Milk diet, with fruit, especially grapes, added, also effective; 1½ quarts of milk to be taken during day and 1 pint of hot milk at bedtime; continue for ten days to two weeks. Crude tar of *Pinus palustris*, mixed with flour and ordered in No. 2 gelatin capsules, gave good results; 2 or 3 capsules one hour after meals. *Joseph.* 42

Constipation. TREATMENT. Hormonal, 20 c.c. injected intravenously or intramuscularly, found effective in constipation with general atony and in postoperative paresis. *Hoaie.* 170

Constipation with Diarrhea. Found in gouty patients, after abdominal and rectal operations, in pulmonary tuberculosis, in achylia gastrica, and in hypochlorhydria with gastrointestinal atony.

TREATMENT. A few (3 to 5) 2- to 5- grain doses of calomel, followed by magnesium sulphate, or sodium sulphate, or a laxative water; in other cases, castor oil in ½- to 1-dram doses 2 or 3 times daily, continued for a month. Ichthyol valuable in cases with much fermentation. Physical treatment with oil or oil-emulsion enemas, hot baths with massage, or hot wet packs changed every 15 to 30 minutes. Rest in bed. Gastric lavage. Well-prepared food. Strong, black coffee with plenty of sugar often useful; also good beer or cream; bread spread with butter and honey; stewed or dried fruit (latter soaked in water); cheese; agar-agar, etc. Modest exercise alternating with rest; salt baths, sitz baths; sensible wearing apparel; correctly fitted corset. *Bernheim.* 69

Coryza, Acute. Aromatic spirit of ammonia and sweet spirit of niter recommended as best agents to "abort" a cold. *Beverley Robinson.* 47

Diabetes Mellitus. TREATMENT. Sodium perborate, applied as a powder, usually twice daily, brought about rapid healing in 3 cases of diabetic gangrenous ulcers. *Herzfeld.* 167

Diarrhea, Infantile. TREATMENT. Soy flour useful in summer diarrhea and some forms of intestinal indigestion; given in form of dilute gruel with or without addition of barley flour and later condensed milk or cows' milk. One to 2 level tablespoonfuls of soy flour to the quart suffice at first; later increased to 4 spoonfuls. Soy-bean, barley, and condensed-milk mixtures useful where, cows' milk disagreeing, there is difficulty in finding food sufficiently nutritious for child. Orange juice advisable from time to time to prevent tendency to scurvy. *Ruhräh.* 52

Diphtheria. TREATMENT. Case in which, after a cure with antitoxin, throat cultures showed abundant diphtheria bacilli three weeks after start of disease. Repeated applications to the throat of a dilute culture of *Staphylococcus pyogenes aureus*, made by inoculating 8 c.c. of bouillon with a loopful of a fresh agar growth of the coccus, led to disappearance of diphtheria organisms from throat, thus preventing the child from being a "diphtheria carrier." General condition markedly improved. No untoward effects. *Page.* 166

Eczema. TREATMENT. Alcohol useful as antiparasitic and to relieve itching. Apply 90 per cent. alcohol twice daily to and around lesions before carrying out other local measures. Good results even in rebellious cases. Applicable in all forms of eczema except those with abundant watery discharge. Continue long after affection overcome, to prevent recurrence. *Monatsh. f. pr. Dermat.* 96

Local treatment with heated air employed in 35 cases of eczema in infants, with good results. Applications made once daily for five to ten minutes; affected region then covered with olive oil. Strict dietetic measures also to be enforced. *Perlmann.* 167

Empyema. TREATMENT. Convenient method of drainage of empyema in young children described. After locating pus with aspirating needle, insert narrow-bladed knife under it and enlarge wound just above a rib enough to admit snugly a short drainage-tube of rather stiff rubber, which is held in place by a cuff of slightly larger tubing, a piece of tape slipped over it, and adhesive plaster fastening tape to skin. Connect rubber tube with glass tube passing through cork of a pint bottle and dipping in warm sterile salt

solution contained in it. Raise bottle till solution runs slowly into pleural cavity, then lower, thus irrigating pleura. Change salt solution two or three times daily, or as often as necessary to keep it fairly clean. *Kenyon.* Page 36

Epistaxis. TREATMENT. Sodium perborate used with success to arrest hemorrhage in epistaxis and after adenoid operations or tonsillotomies. *Herzfeld.* 167

Erysipelas. TREATMENT. Solution of 20 drops of phenol in 25 Gm. (6 drams) of pure neutral glycerin recommended. It is painted over affected area and surrounding skin, but must not come in contact with mucous membranes. *Lodi.* 98

Esophageal Carcinoma. TREATMENT. Small amounts of hydrogen peroxide solution of 1 to 2 per cent. strength, sipped at intervals of an hour, facilitate descent of food, even in late cases where rectal feeding has been resorted to. *Liebermeister.* 98

Furuncle. TREATMENT. Seen early, a superficial furuncle may be aborted by inserting pointed matchstick, dipped in phenol, deeply into its center; if lesion deep, inject several drops of liquefied phenol at base of lesion. For a furuncle seen late in first stage: Scratch off central vesicle and apply a Bier cup. Dress with sterile gauze wrung from normal saline solution with 1 per cent. sodium citrate, after inserting a bit of rubber dam in opening if there be tension. Protect surrounding skin from citrate with ointment, and over citrate gauze apply waxed paper or oiled silk, covered by compress and bandage. Cupping and dressing may be repeated every four hours until slough loose, when latter is removed with small forceps. Apply citrate only three days. Also give citrate internally, 15 grains (1 Gm.) *t. i. d.* after meals. Where bluish, flabby granulations: Strap edges of wound with adhesive strips, dry granulations, mop with iodine tr., and dust with Bier's powdered silver nitrate. Snip off exuberant granulations. To promote epithelial regeneration, use 8 per cent. scarlet red ointment or amidoazotoluol. Prevent autoinoculation by shaving skin around furuncle and disinfecting with 70 per cent. alcohol, tincture of iodine with benzine, diluted liquor formaldehydi, or aluminum acetate solution. Repeat local disinfection with benzine at each dressing. Where furuncle first seen in stage of softening, incise and drain; latter may be assisted with a Bier cup. For very large lesions or in furuncles of face, inject 3 per cent. novocaine under base, wait five minutes, and remove core from tumor with small curette. Where supposed boils become carbuncles, excise the whole area, controlling bleeding with cautery and compresses, and apply pure liquefied phenol. For recurring furunculosis: Bacterin therapy with killed staphylococci; initial dose, 100 million bacteria, increased by weekly doses up to 1 billion. Yeast also useful. *Skillern.* 99

Gastric Dilatation. DIAGNOSIS. Vomiting, abdominal pain, distention, constipation (occasionally diarrhea), collapse, splashing sounds, and peristaltic movement over stomach, appearing suddenly in the course of pneumonia, should at once suggest acute gastric dilatation.

TREATMENT. 1. Introduce stomach tube and practise lavage as often as distention occurs, even in cases with collapse. 2. Turn patient on right side or face. 3. Interdict food and drink by mouth. 4. Strychnine and eserine hypodermically apparently useful in some cases. *Fussell.* 107

Gastric Neuroses. TREATMENT. Condition nearly always associated with gastric atony and vertical "fish-hook" stomach. 1. Relief from pain (due to hyperacidity) obtained by recumbent position on right side or knee-chest posture for several minutes at short intervals after meals. 2. Peristalsis assisted by massage or having patient clasp left knee and make strong intermittent pressure of thigh against abdomen while lying halfway between prone and lateral position. 3. Helpful suggestion. 4. Abundant nourishment in small quantities at short intervals. 5. Attention to any existing anemia. Rational non-surgical treatment effective in majority of cases. *Greene.* 174

Gastric Ulcer. DIAGNOSIS. Rice, milk, potatoes, and prunes cause positive reaction in benzidine test for occult blood in stomach contents, and hence must be excluded from diet before test is made. *Floersheim.* 105

Watermelon pulp found to cause positive reaction in guaiac-turpentine test for occult blood in feces. *Newbold.* 106

Gonorrhea, Acute. TREATMENT. Method causing arrest of suppuration in three to five days described. Inject 5 to 15 c.c. (¼ to 4 drams) of 0.25 per cent. protargol solution into urethra every half-hour in daytime and every hour at night. To be retained two to ten minutes, during which time urethra is gently massaged from behind forward. Increase strength of solution gradually. Patient should ingest large amount of fluid, in order to be able to urinate before each injection. Continue injections, given as often as possible, two or three weeks after cessation of pus. Then alternate protargol with lead acetate and zinc sulphate, of each, 0.3 Gm. (2 grains) in 200 Gm. (4⅔ ounces) of water. *Kuhn.* 37

Gonorrheal Cervicitis and Endometritis. TREATMENT. I. Acute cases: 1. Confinement to bed. 2. Keep emunctories active. 3. Limit diet. 4. Cleanse vagina frequently with large amounts of hot saline solution or hot water containing boric acid or a weak iodine solution. Use irrigator with nozzle projecting a straight forcible stream, and pinch mucous membrane of introitus around nozzle, to flush cavity satisfactorily. Intrauterine measures and pelvic operation intervention

contraindicated. II. Subacute cases: 1. Soften and dilate cervix with Goelet's uterine electrodes and galvanic current. 2. Flush uterine cavity with hot iodine solution, 1 dram (4 c.c.) of the tincture to a quart of water, or silver nitrate, 1: 5000. 3. As condition improves, substitute daily intrauterine injections of iodized phenol (equal parts of iodine tincture and phenol) or 1 per cent. silver nitrate. Use syringe with long pliable nozzle, with its tip wrapped with cotton; inject fluid into cotton and withdraw syringe. Insert iodine-glycerin tampon (1 dram to 4 ounces), which patient is to remove next morning. Remove cotton within uterus at next visit. III. Chronic cases: 1. Puncture, evacuate, and sterilize diseased Nabothian glands. 2. Touch opened glands and erosions about os with pure iodine tincture. 3. Intrauterine irrigations and injections as above, three times weekly. 4. Curettage of uterus, thoroughly scraping internal os and cervical canal, followed by swabbing with iodine tincture and appropriate after-treatment. *Dannreuther.*
Page 100

Gout. TREATMENT. Radium emanations used in 400 cases of gout and chronic arthritis. Patient in closed radium room for 24 to 36 sittings of two hours each. Injections of soluble radium salts near involved joints given in addition; also superheated air, electric light, and brine baths. Absolute rest in bed an adjuvant. Out of 50 cases in which blood was examined before and after treatment, uric acid disappeared in 37 instances, synchronously with marked amelioration. Cases in children particularly benefited, but cases of senile tuberculous and syphilitic arthritis and cases of very long standing, with marked joint changes, not suited for radium treatment. Low purin diet should also be tried for a few weeks or months; if ineffective, replace it by simple mixed diet, with as much of green vegetables and fruit as possible. *Gudzent.* 95

Hay Fever. TREATMENT. Calcium creosote solution diluted with 8 to 10 parts of water recommended; throat and nasal fossæ to be sprayed every hour or two for two or three days. Potassium iodide, 5 grains *t. i. d.*, effective in hay asthma; arsenic may be added with advantage. *Kolipinski.* 77

Hemophilia. TREATMENT. Bleeding from wound in a hemophilic boy, previously uninfluenced by any remedial agent, checked by allowing blood from finger of a normal individual to drop on the wound. A clot formed immediately. *Sayer.* 168

Hemorrhoids. TREATMENT. Injection method used in 55 cases with satisfactory results. After suitable preparation, place patient on left side, with knees flexed. If tumor presents, apply compress soaked in 2 per cent. phenol to it and allow to remain two or three minutes; if not, use rectal speculum. Solution to be injected into pile consists of equal parts of phenol, glycerin, and sterile water, and of this 2 to 4 minims (0.12 to 0.25 c.c.) are used, according to size of growth. After injection tumor should be forced back above sphincter, and patient recline for next six hours and abstain from straining, etc. If prolapse should occur, pile should be returned at once and hot compresses frequently applied. Pain after operation may be relieved, if necessary, with a few 2½-grain (0.15 Gm.) tablets of Dover's powder, though it is rarely severe. Inflammation of pile occurred in 3 cases of series. After disappearance of tumor a small ulcer may remain, which will rapidly heal on applying silver nitrate solution (10 or 15 grains to the ounce) every two or three days. *Wilkinson.* 168

Hepatic Affections. TREATMENT. Combination of sodium salicylate and sodium benzoate found useful for cholagogue and "flushing-out" effects in various disorders, especially suppurative angiocholitis, cholecystitis, and lithiasis. Sodium salicylate induces flow of concentrated bile; sodium benzoate, of dilute bile. Relative amounts of two salts to be varied according to indications. Formula suggested: Sodium benzoate, 0.75 Gm. (12 grains); sodium salicylate, 0.5 Gm. (8 grains); sodium borate, 0.25 Gm. (4 grains); rhubarb, 0.3 Gm. (5 grains); to be taken *t. i. d. Polain-Cartier.* 38

Hernia, Inguinal. TREATMENT. In infants use truss; to be kept applied continuously. After two years, if hernia still persists, urge radical cure, if possible. *Campbell.* 169

Hip-joint, Congenital Dislocation of. TREATMENT. Manipulative method used in 33 cases. If used at earliest possible time after infancy, the method may be expected to yield stable articulation with perfect function in 60 to 70 per cent. of cases; in remainder condition is usually much improved. Attended by little or no danger in children below 8 years of age. *Simpson.* 38

Hyperchlorhydria. TREATMENT. Rhubarb and soda, or rhubarb and magnesia, either in mistura rhei et sodæ or in Gregory's powder, useful in gastric disorders with fermentation or hyperacidity. *Beverley Robinson.* 47

Hyperidrosis. TREATMENT. For sweating feet: Bathe them every night with 1 per cent. potassium permanganate solution and dry thoroughly. Next morning dust on following powder: Potass. permang., ʒij (8.0); alumin. pulv., gr. xx (1.25); talc. pulv., ʒj (32.0); zinci carbonat. et oxid., of each, ʒss (16.0); or else, have patient wear white stockings previously soaked in saturated boric acid solution. Where bromidrosis, use dilute formalin. For sweating in axillæ: Bathe with weak vinegar, and apply following powder on gauze pad: Acid. salicyl., gr. xx (1.25); amyli pulv., ʒij (8.0); alumin.

pulv., q. s. ad ʒiss (48.0); or else, use following lotion: Betanaphtholis, ʒj (4.0); glycerini, ʒij (8.0); alcoholis, q. s. ad ʒiiss (80.0). Where persistent bromidrosis, short exposures to X-rays may be effective. *Moachon.* Page 177

Hyperthyroidism. DIAGNOSIS. Elevation of temperature found an early symptom in many cases, especially mild ones. When, in absence of acute or other tangible disease, there have been loss of weight and augmented nitrogen and phosphoric acid excretion, and when, after administration of a thyroid or iodine preparation, there occur the characteristic psychoneurotic and cardiac symptoms of excessive thyroid activity, elevation of temperature is a thyrotoxic phenomenon. *Stern.* 39

Hypothyroidism. DIAGNOSIS. Blood showing mild leucocytosis and relative lymphocytosis with eosinophilia from 3 per cent. up is highly suggestive of thyroid insufficiency. *Collins and Kaplan.* 40

Intertrigo. TREATMENT. In infants acute enterocolitis, frequently the cause of intertrigo through the irritating discharges, should be overcome by dieting: stop milk; give rice, arrowroot, or albumin water, with plenty of pure water to allay thirst. Internally, give sodium phosphate, 5 to 10 grains (0.3 to 0.6 Gm.) every morning for two or three days, usually followed by castor oil, 1 dram (4.0 c.c.). Locally, soak parts with oatmeal water. Give an oatmeal bath, by soaking bag filled with oatmeal in tub filled with boiling water for one-half hour, then allowing to cool to 100° F. and giving child hip bath. Then use following salve: Calamin and zinc oxide, of each, 3 parts; petrolatum, 50 parts. Dust parts with cornstarch or wheat flour. Use salve three times daily, previously cleansing parts with olive oil, if necessary. *Fischer.* 170

Intestinal Paresis, Postoperative. TREATMENT. Pituitary extract used in 21 laparotomy cases. Dose, 16 minims (1 c.c.), commenced six hours after operation and repeated every few hours until 18 doses given. All patients passed flatus freely within a few hours, and were free of pain and distention. In all cases but 2, bowel action was obtained after a simple enema. Three intramuscular injections of 1 c.c. each recommended during first twenty-four hours as routine practice in laparotomy cases. Pulse rate remains much lower than usual. *Bidwell.* 44

Jaundice, Catarrhal. TREATMENT. Cold injections of water or normal saline solution recommended, favoring biliary flow by promoting peristalsis. *Polain-Cartier.* 38

Laryngitis, Acute. TREATMENT. Freshly powdered cubeb, taken frequently and in moderate amount dry on tongue, found of service in acute throat disorders. *Beverley Robinson.* 47

Lupus. TREATMENT. Pfannenstiel's method found useful in lupus of nasal mucous membranes. Give patient 45 grains (3 Gm.) of sodium iodide daily, divided into 6 doses. Every morning cleanse nasal cavity of crusts with nasal douche containing sodium chloride and boric acid, and, after drying, insert tampon of sterile gauze, in contact with affected parts. Have patient keep tampon constantly moist with 2 per cent. hydrogen peroxide solution. Free iodine is thus liberated from iodide excreted by nasal mucosa, exerting its effect on lesions. In early cases ulcerations heal in one to three weeks. *Sequeira.* 102

Mastoiditis. DIAGNOSIS. A small mastoid process with thick outer cortex and small antrum is especially subject to "atypical" mastoiditis, condition escaping detection until serious complications appear. Suspicious symptoms in such cases are: 1. Discharge from ear more profuse than one would readily expect from middle ear alone and continuing profuse for two or three weeks. 2. Increased swelling of posterosuperior wall of external auditory canal. X-ray found useful for early diagnosis in a number of cases. *Crockett.* 41

Blurring of outline of tip of mastoid elicited by grasping both mastoids anteriorly and posteriorly between fingers and noting difference of definiteness of outline on the healthy and abnormal sides found valuable as corroborative evidence in early, doubtful cases of mastoiditis. Swelling from otitis externa may be confusing, but this is usually reduced in a few days by local treatment and ice-bag, while blurring of mastoid remains. *Alderton.* 104

Melæna Neonatorum. ETIOLOGY. Condition ascribed to oral infection; "mouth-cleansing" after birth considered inadvisable, giving chance for introduction of organisms. TREATMENT. Desperate case saved by injections of human blood-serum, doses of 20, 18, 10, 6, 18, 14, and 6 c.c. being given in four days. Method of securing serum was ordinary venesection (after careful skin cleansing), serum being allowed to separate spontaneously from clot in ¼-liter flasks. Injections made with antitoxin syringe anywhere from scapulæ to buttocks. *Nicholson.* 172

Nasal Accessory Sinuses, Inflammation of. TREATMENT. In acute cases: 1. Calomel followed by a saline, then by diaphoresis with hot lemonade. 2. Liquid diet. 3. Acetylsalicylic acid or hexamethylenamine, to reduce suppuration. 4. Atropine sometimes valuable, but to be used with care. 5. Locally, application with cotton swab of 2 per cent. cocaine solution, followed by epinephrin, then by 4 per cent. antipyrin. Spray of epinephrin in alkaline medium every two or three hours. 6. After thorough contraction of mucosæ, clear opening of sinus or sinuses with swab and irrigate nose gently with warm saline solution containing a little sodium bicarbonate. 7. Oily spray of menthol and camphor. 8. Mild suction with

exhaust bulb or Brawley apparatus. 9. Leucodescent lamp to relieve discomfort. 10. Hot applications. 11. Irrigation of sinuses (difficult, sometimes impossible without removal of bone). If condition unrelieved in a few days, operation. In subacute cases, same treatment + autovaccines. Latter also useful to hasten recovery in acute cases. *Miller.* Page 173

Nervous Affections. DIAGNOSIS. External malleolar reflex (Chaddock's sign), indicating involvement of pyramidal tracts, found in 20 cases to be equal in value to the extensor plantar reflex (Babinski). It is more delicate, appears earlier, and often lasts longer than the Babinski. Consists of irritating outer side of foot below external malleolus with nail file; if positive there occurs dorsal extension of toes. *Ingram.* 95

Otitis Media, Acute. TREATMENT. Relation of acute pharyngitis, nasal-sinus, middle-ear, and mastoid inflammations to an "active autotoxic state" of the system emphasized. Calomel in $\frac{1}{10}$-grain (0.006 Gm.) doses, frequently repeated up to 1 or 1½ grains, found valuable to stimulate defensive powers of body and shorten convalescence. Used in combination with local treatment. Calomel, followed by castor oil or salines, given every other day. *Snow.* 42

Pain, Local. TREATMENT. Combination of menthol and methyl salicylate in hydrated wool-fat, covered with cotton and gauze bandage, recommended to relieve local pain where skin is intact. *Beverley Robinson.* 47

Paralysis Agitans. DIAGNOSIS. New sign, present in the early period of rigidity, when diagnosis difficult, described. Consists of a "cog-wheel," intermittent resistance felt when examiner grasps wrist with one hand, steadies arm above elbow with the other, and makes rapid flexion and extension of arm. Never found present in other diseases. *Moyer.* 176

Paralysis, General. TREATMENT. Salvarsan administered intravenously in a case of paresis in maniacal stage, with marked improvement. *Holland.* 73

Placenta Prævia. TREATMENT. Absolute quiet, rupture of membranes when required, and irrigation with hot water recommended. Water should be at 45° to 48° C. (113° to 118° F.), and at least 7 or 8 liters of it should be used. Repeat irrigation if necessary to check hemorrhage. Seventy cases thus treated without a death. Infection from tampon and mishaps in version or introduction of bag thereby avoided. When hemorrhage arrested, spontaneous expulsion of fetus to be patiently awaited. Instrumental dilatation contraindicated. *De Bovis.* 44

Plague, Bubonic. TREATMENT. Early crucial incision into the swollen glands employed in 62 cases, with 54 recoveries. Causes immediate improvement in patient's condition, temperature being lowered and headache alleviated. Wounds dressed with iodine lotion, 1 dram to the ounce of water. *Nesfield.* 45

Pleuritis. DIAGNOSIS. X-ray studies showed that location of fluid in chest in serofibrinous pleurisy depends upon the position assumed most constantly by patient during acute stage, and that exudates of this type are but slightly, if at all, mobile. These facts are of assistance in differentiation of serofibrinous from other varieties of effusion. *Engelbach and Carman.* 106

Pneumonia, Lobar. TREATMENT. Creosote inhalations and moderate bloodletting, especially with leeches, recommended. *Beverley Robinson.* 47

Stock pneumobacterins, in doses of 25 to 600 millions, used in 20 cases, with 15 per cent. mortality; 30 other similar cases, under usual methods of treatment, showed 40 per cent. mortality. In some of the cases, strikingly prompt benefit followed use of bacterins; in others results were less marked or *nil*. Results seemed more definite with the larger doses. Dosage can be adjusted according to clinical phenomena; where malaise, headache, chilliness, or definite rigors, with rise of temperature, follow an injection, it is unwise to increase dose. *Robertson and Illman.* 107

Pneumoperitoneum. DIAGNOSIS. In presence of free gas in peritoneal cavity, there occurs a concentric diminution of area of hepatic dullness, *i.e.*, dullness disappears at same time from upper border of liver downward and from lower border of liver upward. In tympanites, on the other hand, liver dullness disappears from below upward only. This distinction found useful in early diagnosis of perforation in typhoid fever. *Berg.* 103

Pneumothorax. DIAGNOSIS. Positive coin test, displacement of heart, and, in right-sided cases, displacement of liver are the most important diagnostic signs, occurring in about 90 per cent. of cases. Succussion splash and metallic tinkle occur in 30 or 40 per cent. *Cruice.* 46

Poliomyelitis, Acute. ETIOLOGY. Poliomyelitis is propagated by dust. Nasopharynx is probably point of entry. *Neustaedter and Thro.* 46

DIAGNOSIS. Lumbar puncture shown to be valuable in distinguishing poliomyelitis of meningeal type from acute cerebrospinal meningitis. Negativity of cerebrospinal fluid in poliomyelitis diagnostic; in meningitis, fluid shows marked turbidity, coarse clot formation, great excess of albumin, copious deposit of polymorphonuclear cells, and meningococci. *Forbes.* 46

Importance of thoroughly cleaning out alimentary canal at earliest period of disease emphasized; copious enemata high up

found useful. Retention of urine may also require treatment with warm baths, hot compresses to abdomen, or, ultimately, catheterization. *Bogardus.* Page 175

Postnasal Catarrh in Children. TREATMENT. If condition acute, paint throat several times daily with boroglyceride, or, in older children, spray with a ¼ grain to the ounce solution of tartrated antimony while patient inspires deeply. Later, add an equal amount of glycerite of tannin to the boroglyceride. Where painting throat resisted, instill into nostril several times daily, while child lies back with head on pillow, a solution of 5 to 10 grains of resorcin to the ounce of saline solution, 10 grains of boric acid to the ounce of water, or 15 grains of sodium bicarbonate to the ounce. As redness of pharynx fades, apply pure glycerite of tannin or a paint of 12 grains of iodine and 15 grains of potassium iodide to the ounce of glycerin, with 5 drops of oil of cinnamon or peppermint. After all redness gone, use an astringent iron paint of 1 dram of the stronger iron perchloride to an ounce of glycerin. For anorexia: an iron tonic; stay in country or at seaside. Keep child well protected from cold for some time after. *Eustace Smith.* 34

Psychoses. TREATMENT. Seven cases—4 in children—reported in which pronounced mental disturbances were shown due to dental impaction, alveolar abscess, or other conditions affecting teeth, and cure or great improvement resulted upon remedying these states. Importance of X-ray examination of teeth and jaws in psychoses emphasized. *Upson.* 129

Puerperal Sepsis. TREATMENT. Intravenous injections of mercury bichloride used in 11 cases, with 6 recoveries. Measure considered worthy of trial in severe cases. Twenty drops of a 1 per cent. solution injected once or twice daily; 1 to 4 grains of bichloride used during the treatment. Precautions necessary: 1. Teeth to be carefully cleansed. 2. Salines to be omitted during treatment. *Stowe.* 110

Rheumatism, Acute Articular. TREATMENT. *Streptococcus pyogenes* vaccine used in 6 cases, in 4 of which no salicylates were given, with good results. Temperature quickly fell in every case, pain ceased, and inflammatory phenomena disappeared. Stock vaccine from several strains of streptococcus used in these cases, but author thinks it preferable to employ a mixed streptococcus and staphylococcus (*aureus* and *albus*) vaccine. *Wolverton.* 48

Rheumatism, Chronic. TREATMENT. In rheumatic conditions associated with anemia and in sore throat of rheumatic origin, following mixture recommended: Dissolve 1 dram (4 Gm.) of sodium salicylate in 2 ounces (60 c.c.) of water. Add liquor ferri perchloridi, plus an ounce of water, giving dark purple mixture. Then add 1 dram of potassium bicarbonate dissolved in 1 ounce of water, and fill up bottle to 8 ounces with water. *Drinkwater.* 51

Lime-poor diet found useful in certain forms of subacute and chronic arthritis, especially deforming arthritis, cases with joint pains following acute polyarthritis, and cases of chronic spinal ankylosis. Cases should be selected by test-diet, to make sure of calcium retention, as other patients will not respond to the treatment. Articles of food allowed in lime-poor diet: White or aleuronat bread, rice, tapioca, wheat flakes, sago, tomatoes, mushrooms, white of egg, meat bouillon, beef, calves' liver, tongue, sweets, vegetable fats, light beer, carbonated waters, port. Distilled water to be used in preparation of food. After six or eight weeks restrictions may be somewhat relaxed. *Hirschberg.* 110

Ringworm, Eczematoid. Fifteen cases studied. Three main types: (1) Acute vesiculobullous, bursting out suddenly like acute vesicular eczema; exudation into vesicles and bullæ commonly pinkish, owing to blood. (2) Chronic intertriginous of the toes; white masses of epithelium between toes with definite margin and slight vesiculation at dorsal edge of interphalangeal skin; intense itching. (3) Chronic hyperkeratotic of soles and palms, with overgrown horny layer and scattered small indolent pustules. DIAGNOSIS microscopic; demonstration of *Epidermophyton inguinale,* an ectothrix, or other organism. TREATMENT. Ointment of 5 per cent. benzoic and 3 per cent. salicylic acids in soft paraffin and cocoanut oil. For feet and hands can increase strength up to 1 dram benzoic and ½ dram salicylic acids to ounce. Where this fails, use 1 dram of chrysarobin in equal parts of chloroform, alcohol, and acetone to the ounce; apply on rising, pulling socks over it as soon as dry; wash off at bedtime. *Whitfield.* 96

Sciatica. TREATMENT. Where acute attack, in spite of the usual measures, persists longer than ten to fourteen days, sulphur baths or hot carbon dioxide baths (102.7° to 104° F., and lasting twenty minutes) should be employed, or heat applied in other ways. If ineffective, author counsels treatment by injections of saline solution and air: 1. Injection of 800 to 1000 c.c. of air, filtered through cotton, under skin on outer aspect of leg. 2. Injection of 60 to 80 c.c. of 0.8 per cent. salt solution, with 0.01 to 0.02 Gm. of novocaine added, just below sacrosciatic notch, as close to nerve as possible. 3. Injection of 10 to 20 c.c. of salt solution, with 0.01 Gm. of novocaine into epidural space of inferior lumbar region, needle being passed in and up through coccygeal notch; preliminary anesthesia of course of injection with novocaine. 4. Where very severe pain and contractures of lumbar muscles, injection of 10 to 15 c.c. of salt solution between third and fourth lumbar

vertebræ into epidural space. Injections to be repeated at intervals of three or four days, substituting 1 to 1.2 per cent. for 0.8 per cent. saline. Two to five series of injections cure obstinate cases. *Sicard.* Page 114

Semilunar Cartilage of Knee, Dislocation of. TREATMENT. Mold piece of sole leather 4 inches long and 1¾ inches wide to inner side of knee, first soaking it in water and cutting edges smooth. Fasten over the displaced cartilage by adhesive straps—2 vertical, 1 horizontal, and 1 oblique—and cover with fairly firm bandage. Patient may walk as usual, notwithstanding soreness. Bandage renewed every ten days. After 3 such treatments condition is well, an aseptic adhesive inflammation having taken place, and only a bandage need be used. *Chandler.* 171

Sinuses. TREATMENT. Following paste used with success in treating a discharging sinus in a breast cancer, after Beck's paste had failed: Bismuth subnitrate, 30 Gm. (1 ounce); petrolatum, 60 Gm. (2 ounces); white wax and paraffin, of each, 5 Gm. (80 grains), and iodine tincture, 2 Gm. (30 minims). The tincture is added after other ingredients mixed. Paste to be stirred when used. Where large amount to be employed, diminish proportion of iodine. *Green.* 177

Skull Depressions at Birth. TREATMENT. Persistent firm pressure with fingers of both hands upon bone surrounding depressed area found effective, causing depressed bone to snap back to normal position. *Hoffmann.* 102

Small-pox. TREATMENT. Mixture of 10 per cent. iodine and 90 per cent. glycerin painted over pustules 2 or 3 times daily in 85 cases; caused drying of lesions and arrest of tissue destruction, and prevented pock-marks. Pustules on face may be opened with sterile instrument and touched with iodine tincture. Desquamation frequently almost completed in four to six days. All cases recovered. *Rockhill.* 115

Sterility. TREATMENT. Case of sterility, with azoöspermia, due to bilateral gonorrheal epididymitis eleven years before, in which bilateral epididymodeferential anastomosis proved curative, spermatozoa reappearing about a year after the operation. *Delbet.* 98

Syphilis. TREATMENT. Salvarsan given intravenously in 10 pregnant women in doses of 0.5 Gm. and subcutaneously in 8 newborn infants in doses of 0.03 Gm. Injections in women in dose mentioned found to be not without danger to fetus, pronounced weakening in heart-sounds being noted in days succeeding injection in one-half the cases. Child of a mother given first injection of salvarsan five and one-half months before parturition was born healthy; a child born seventy-two days after salvarsan injection was syphilitic. In the newborn, salvarsan was found to act promptly on pemphigus and to cause disappearance of spirochetæ from lesions; it is capable of producing prompt and lasting recovery from hydrocephalus of syphilitic origin. Smaller doses now advocated by author: 0.2 Gm. for pregnant women, repeated in six days; 0.01 for newborn infants, repeated twice or thrice at six-day intervals. *Bar.* 49

Emulsion of salvarsan in lanolin oil found a satisfactory mode of administration in 30 cases. *Burke.* 50

Tabes Dorsalis. TREATMENT. Salvarsan administered intravenously in 4 cases, along with hydrotherapeutic measures, with striking improvement. *Holland.* 73

Tetanus. TREATMENT. Phenol injections used in 5 consecutive cases, all recovering; 2 other cases treated with antitoxin died. Ten minims of 10 per cent. solution of pure phenol in sterile water, diluted to 30 or 40 minims, injected deep into muscles, at first every three hours, later at longer intervals as improvement appeared. Injections made into buttocks, deltoids, or pectorals. No untoward results. Urine, however, should be watched for smoky color, as a precaution. Severity of convulsions always diminished by the treatment, sometimes after third or fourth dose. In fully developed cases, second dose to be given one hour after first. Original wound to be excised or cauterized, as usual, with strong solutions of phenol, silver nitrate, or nitric acid. *Kintzing.* 115

Tonsillitis, Acute. TREATMENT. Tincture of iodine applied locally in 400 cases in children, with unusually prompt cures. Also used in pharyngitis, otitis media, tonsillar and nasal diphtheria, laryngitis, stomatitis, etc. For a milder application deep down in throat or in nose, equal parts glycerin and iodine tincture is satisfactory. In acute contagious diseases applications of iodine tincture to throat are of prophylactic value, combating spread of infection. *Sill.* 171

Trachoma. TREATMENT. Subconjunctival injections of diphtheria antitoxin used in 50 patients, 30 being practically cured and 20 greatly improved. After turning lids, eyes first washed with boric acid and saline solutions, then 1 c.c. fresh antitoxin injected in each lid from within outward. Lids then returned to normal position and another cubic centimeter injected under skin and muscle of upper lid. Inflammatory reaction for thirty-six hours, then disappearance of granules. Three or four such treatments given successively. *Pachopos.* 178

Tuberculosis. TREATMENT. Tuberculin applied locally in 10 cases, comprising suppurative cervical adenitis, anal fistula, and sinuses, with early cures in previously rebellious cases. Parts first irrigated with salt solution, then tuberculin solution sprayed on, or, in sinuses, introduced with syringe and

flexible cannula. Mouth of sinus sealed with collodion for several hours. Initial dose must be small; later dose is carefully increased, avoiding general reaction. Locally there is pronounced reaction at first, then stimulation of processes of repair. *Beasley.* Page 56

Tuberculosis, Pulmonary. DIAGNOSIS. Hemoptysis occurring without warning in young adults, and unassociated with further signs or symptoms of tuberculosis, is probably of tuberculous origin and should be so treated. Hemoptysis in pneumonia, bronchitis, asthma, or following trauma should lead to suspicion of an underlying tuberculous process. *Bartlett.* 101

TREATMENT. Citrate of iron hypodermically found very efficient in relieving the secondary anemia in 257 cases, 70 per cent. of which were advanced or far advanced cases. Employed routinely where reduction in hemoglobin greater than 10 per cent. Dose, 0.05 Gm. (⅚ grain), injected in buttock. Italian preparations found least irritating. Maximum benefit attained after 30 to 40 consecutive daily doses. *Bullock and Peters.* 32

Comparative study of 146 cases receiving tuberculin and 234 treated by hygienic-dietetic method alone. Conclusion reached that tuberculin is valuable in tuberculosis, especially in moderately advanced cases, and is of special value as a protection against relapse. Autogenous vaccines used in 75 other cases; temperature rapidly returned to normal, expectoration diminished, and hemorrhage was rare. *Pettit.* 57

Creosote carbonate, 10 grains in capsules every three or four hours, used with satisfaction in cases of tuberculosis with sudden symptoms of pneumococcic infection (shown by malaise, moderate rise of temperature, followed by bloody sputum and preponderance of pneumococci in saliva). *F. N. Robinson.* 152

Typhoid Fever. DIAGNOSIS. Russo's test found a valuable diagnostic aid in early cases. To 4 or 5 c.c. of patient's urine add 4 drops of 0.1 per cent. aqueous solution of methylene blue. After thorough admixture examine against light; a mint- or emerald-green color is positive, whereas any bluish tint renders test negative. Urines containing bile also give the test; therefore, this must first be excluded. *Rolph and Nelson.* 58

Early recognition of perforation facilitated by observation of concentric diminution of liver dullness. (See Pneumoperitoneum.) *Berg.* 108

Careful, repeated leucocyte counts claimed to afford earliest reliable means of typhoid diagnosis for general practitioner. Characteristic leucocytic picture: 1. Leucopenia, progressive, very likely preceded by slight leucocytosis. 2. Initial moderate polynucleosis, lasting first four to eight days. 3. Progressive, marked lymphocytosis, displacing polynucleosis and lasting well into recovery. 4. Increase in large mononuclears, beginning with onset of disease. 5. Sudden, early, and complete disappearance of eosinophiles. *Hultgen.* 116

TREATMENT. Ipecac used in 6 cases with good results. In every case but 1 patient became afebrile within four days. Dose in the earlier cases, 30 grains (2 Gm.) on first evening, diminished daily by 5 grains down to 10 grains (0.65 Gm.); in other cases, 10 grains morning and evening, later decreased to 10 grains once daily; drug was given in salol-coated pills, preceded by tincture of opium to prevent vomiting. *Frazier.* 103

Lumbar puncture twice performed in a case with intense, persistent headache, second puncture bringing relief. *Oddo and Monges.* 178

Uremia. DIAGNOSIS. Depression of reflexes and positive Babinski phenomenon found valuable as a very early indication of oncoming uremia. Present in the stage of "preuremia." *Curschmann.* 48

Urethritis. DIAGNOSIS. Improved method of differentiating anterior from posterior urethritis described. Slowly inject 1 c.c. of 0.5 per cent. aqueous solution of basic fuchsin into anterior urethra and have it retained one-half to one minute, with slight massage. Allow fluid to escape and have patient urinate in 2 high glasses. If only stained shreds are present, there is no posterior urethritis; if only white, unstained shreds, infection is in posterior urethra; if both stained and unstained, process is both anterior and posterior. *Wolff.* 118

Vaccination Site. TREATMENT. Picric acid applied to vaccinal lesion in 22 children, to harden tissues and prevent local infection. Four per cent. solution in 95 per cent. alcohol painted over and around vaccinal site forty-eight hours after vaccination and daily thereafter. Inflammatory reaction and constitutional disturbance lessened. No interference with success of vaccination. *Schamberg and Kolmer.* 118

Valvular Disease, Cardiac. DIAGNOSIS. To determine whether a murmur is systolic or diastolic when rate is rapid or murmur unusual, make intermittent pressure on radial artery to correspond in time with the murmur; if the finger, pressing synchronously with the murmur, feels the radial pulsations, murmur is systolic; if not, diastolic. *Long.* 167

Varicose Ulcers. TREATMENT. Stimulate granulations with silver nitrate (30 grains to the ounce), cover ulcer with sterile gauze, and apply long adhesive straps to skin on either side of lesion till skin well wrinkled. Have foot elevated on pillows till it returns to normal size. Change adhesive straps upon alternate days or oftener. Massage and attention to bowels. Linen elastic stockings, put on over white stockings to absorb perspiration, after ulcer cured. *Gills.* 178

Vincent's Angina. DIAGNOSIS. Signs distinguishing it from lacunar tonsillitis are: 1. Absence of fever. 2. Pain more localized on affected side, and is severe, lancinating. 3. General malaise and physical exhaustion very marked.

TREATMENT. First perform gentle curettage of the tonsillar crypt involved. Then apply 12 per cent. silver nitrate solution. *Wherry.* Page 58

Salvarsan used locally, first in solution, then in powder, in a severe and obstinate case; prompt recovery. *Achard and Flandin.* 118

Vomiting of Pregnancy. TREATMENT. 1. Magnesium carbonate, 2 drams; magnesium sulphate, 1 ounce; mint water (1:40), 1 ounce; water, to make 8 ounces; wineglassful to be taken early in the morning. Cascara given daily in small doses for two or three weeks. 2. Simple diet; evening meal to consist only of thin porridge, gruel, or arrowroot. Koumiss; champagne, ½ hour before a meal. 3. Where relief from nausea only obtained after complete evacuation, encourage latter by the sipping of warm water. 4. Absolute recumbency in severe cases. 5. Drugs: Effervescing mixtures, salicin emulsion, phenyl salicylate, compound tincture of cardomom in dram doses, antipyrin or acetanilide with sodium bromide, small chloral and potassium bromide enemata, wine of ipecac in hourly minim doses; validol found most effective drug; menthol, 1 part in 60 of water, with 30 parts of alcohol or brandy, or chloroform (3 to 6 drops on sugar or in water) sometimes useful. 6. Rectal feeding, gastric lavage, laudanum stupes on epigastrium, ether spray, blistering of cervical spine, and ice-bags exert partly psychical effect. 7. Mental therapeutics, in purely neurotic type of vomiting. 8. Massage, electricity, blisters, etc., may help. *Hall.* 119

Whooping-cough. DIAGNOSIS. Edema of the eyelids, especially the lower lids, sometimes appears before the cough and may be of assistance in the diagnosis. *Thursfield.* 97

Wounds. TREATMENT. Nuclein solution found useful to ward off infection in cases of crushed and lacerated hands, burns, varicose ulcers, minor cuts, etc. *Achard and Redfield.* 105

Sodium perborate found useful as a dressing in infected wounds and acute or chronic ulcers. *Herzfeld.* 167

ANNOUNCEMENTS.

AMERICAN MEDICAL EDITORS' ASSOCIATION.—The annual meeting of this society will be held at Atlantic City, New Jersey, on June 1st and 3d, with headquarters at the Marlborough-Blenheim Hotel. Dr. Thomas L. Stedman, editor of the *Medical Record*, will preside, and an attractive programme is being prepared. The annual banquet will be held on the evening of June 3d. Every editor and those interested in medical journalistic work will find this meeting worth attending.

GREATER NEW YORK NUMBER.—In June the *American Journal of Surgery* will issue a number composed of original contributions from prominent members of the medical profession residing in Greater New York. Among those to contribute are: Herman J. Boldt, C. N. Dowd, M. Dunning, Wm. S. Gottheil, E. L. Keyes, Jr.; Howard Lilienthal, Chas. H. May, Willy Meyer, Robt. T. Morris, S. Lewis Pilcher, John O. Polak, James P. Tuttle, James P. Warbasse, and others. Contributions from these well-known writers should make this issue of particular interest and value.

Book Reviews

A HANDBOOK OF PRACTICAL TREATMENT by Many Writers. In Three Volumes. Edited by John H. Musser, M.D., Professor of Clinical Medicine, University of Pennsylvania, and A. O. J. Kelly, M.D., Late Assistant Professor of Medicine, University of Pennsylvania. Volume III: Octavo of 1095 Pages, Illustrated. Philadelphia and London: W. B. Saunders Company, 1912. Per volume: Cloth, $6.00, net; Half-morocco, $7.50, net.

The third volume of this work, which completes the series, is devoted to constitutional diseases, diseases of the respiratory, digestive, urinary, and nervous systems, as well as to diseases of the muscular system and mental diseases. The most extensive and valuable

contributions to this volume are those on "Diabetes Mellitus," by T. C. Janeway; "Obesity," by Albion Walter Hewlett; "Gout," by Thomas B. Futcher; "Diseases of the Nose and Throat," by Charles W. Richardson; "Diseases of the Bronchial Tubes," by John H. Musser; "Hemoptysis," by James E. Talley; "Treatment of Tracheal and Bronchial Obstructions," by Chevalier Jackson; "Surgery of Infectious Diseases of the Lung and Pleura," by Samuel Robinson; "Diseases of the Stomach," by B. W. Sippy; "Diseases of the Intestine," by W. A. Edwards; "Constipation," by John H. Musser and George Morris Piersol; "Diseases of the Liver," by Charles G. Stockton; "Visceroptosis," by Joseph Sailer; "Peritonitis," by John H. Jopson; "Diseases of the Nervous System," by W. G. Spiller; "Treatment of the Functional Nervous Disorders," by F. X. Dercum, and "Mental Diseases," by James Hendrie Lloyd.

The third volume is up to the standard of those previously issued. In fact, it may be said to be superior in some respects, for some of the articles in the two earlier volumes could hardly be said to have been up to date. Hemophilia, for example, would hardly have done credit to a book written over a decade ago. The illustrations are good, though few. On the whole, the work contains a good deal of valuable information on the classic methods of treatment. It is a sad exemplification of the uncertainties of human existence that the completion of this treatise should be closely followed by the death of the second of its editors, the first, Dr. Kelly, having departed this life last year. May the work stand as a memorial to their labors so prematurely cut short!

TEXTBOOK OF OPHTHALMOLOGY in the Form of Clinical Lectures. By Dr. Paul Roemer, Professor of Ophthalmology at Greifswald. Translated by Dr. Matthias Lanckton Foster, Member of the American Ophthalmological Society; Member of the American Academy of Ophthalmology and Oto-Laryngology. Vol. I. Octavo of xvi + 275 Pages, with 186 Illustrations in the Text and 13 Colored Plates. New York: Rebman Company, 1912. Cloth, $2.50.

This work consists essentially of a record of the clinical lectures delivered by Professor Roemer at Greifswald, and differs radically in mode of presentation from the ordinary textbook of ophthalmology. Its arrangement is somewhat disadvantageous in that the conventional divisions of individual disorders—etiology, pathology, diagnosis, etc.—to a certain extent lose their identity, and the convenience of the work to the hurried searcher after some particular piece of information is slightly diminished; but it is difficult to conceive of a more charming and, withal, satisfactory presentation of ophthalmology than is offered in this work. Not only are the relative values of certain facts brought out in a way which is hardly possible in the ordinary systematic textbook, but the subjects of diagnosis and treatment are gone into with greater thoroughness and attention to practical detail than is usual elsewhere. The clinical characteristics of different conditions are so clearly and vividly presented as to furnish a definite mental picture to the reader.

The present volume is concerned with the "Methods of Examining the Anterior Segments of the Eye," "Diseases of the Conjunctiva and Cornea," "Diseases of the Iris," and "Diseases of the Lens." It is divided into 67 different sections, each devoted to some individual pathological state or to some special aspect of a subject. Chief emphasis is naturally laid on those methods of treatment which the author has found most reliable, but those advocated by other observers also come in for their share of attention. Throughout the work there prevails that critical spirit which seeks to find the why and wherefore of every conclusion reached or measure used, and which tends to make of medicine a science based on rational principles. Among the portions of the work which are particularly commendable are those on the methods of clinical examination, corneal ulcers, the various forms of acute conjunctivitis, gonorrheal ophthalmia, and trachoma. Many of the text illustrations show the actual procedures necessary in applying treatment, while the remainder are mainly anatomical and histological. There are also six excellent colored plates, which portray most clearly such conditions as coloboma, arcus senilis, pterygium, pannus, trachoma, iris prolapse, the iritides, cataracts, etc. The translation is fully adequate. On the whole, the work can be said to represent a most valuable addition to the treatises on ophthalmology now available to the English-speaking practitioner. None will fail to find in it the information he expects, while in many respects it covers the ground more fully than any other work with which the reviewer is familiar.

A TEXTBOOK OF THE PRACTICE OF MEDICINE. By James M. Anders, M.D., Ph.D., LL.D., Professor of the Theory and Practice of Medicine and of Clinical Medicine, Medico-Chirurgical College, Philadelphia. Tenth Revised Edition. Octavo of 1328 Pages, fully Illustrated. Philadelphia and London: W. B. Saunders Company, 1911. Cloth, $5.50, net; Half-morocco, $7.00, net.

That this work has gone through ten editions in the fourteen years which have elapsed since its initial appearance affords clear evidence of its popularity, as well as of the author's

desire to keep it as nearly as practicable abreast of modern progress. Numerous additions have been made in the present volume. Among the new and written matter are included such topics as milk-sugar in typhoid fever, Chantemesse's serum, Brudzinski's sign in cerebrospinal meningitis, tonsillectomy in acute articular rheumatism, artificial pneumothorax in pulmonary tuberculosis, nastin in leprosy, appendicostomy in chronic dysentery, salvarsan in syphilis, Wassermann's reaction, Grawitz's treatment and transfusion of blood in pernicious anemia, autoserotherapy in serofibrinous pleurisy and ascites, Oertel cure in chronic myocarditis, glycyl-tryptophan test in cancer of the stomach, McBride's treatment of alcoholism, Freud's theories, etc. The section on tropical diseases has been enlarged, and certain new aspects of familiar disorders, such as masked chlorosis, blocked pleurisy, appendix dyspepsia, etc., added.

Thus brought up to date, the work is certain to find favor. The revised edition fully entitles it to retain its place among the best one-volume works on practice now extant.

A Pocket Medical Dictionary. By George M. Gould, A.M., M.D., Author of "The Illustrated Medical Dictionary," "The Practitioner's Dictionary," and the "Student's Medical Dictionary." Sixth Edition, Revised and Enlarged. 1005 Pages. Philadelphia: P. Blakiston's Son & Co., 1911. Limp Leather, Gilt Edges, $1.00, net.

The new edition of Gould's pocket dictionary differs from the previous issues in that all eponymic terms and tests, which previously appeared in separate tables, are now included in the general text in their proper alphabetical order. This is undoubtedly a justifiable alteration, which will save time to those consulting the book. This edition also has 142 pages more than the last, though by the use of various devices the size of the book remains. The words now included number 34,613, an increase of about 4500. Many definitions have been rewritten, and useless or obselete terms eliminated. At the beginning of the work appears, as before, a list of symbols and abbreviations, and at its close, physician's and veterinary dose-tables. The book is certainly gotten up in a most convenient form for ready reference, and the present edition is well calculated to enjoy the popularity already vouchsafed to its predecessors.

Recent Studies of Syphilis, with Special Reference to Serodiagnosis and Treatment. Medical Symposium Series No. 1. Second Edition, Revised. A Reprint of Articles Published in the Interstate Medical Journal. Paper, 212 pp. St. Louis: Interstate Medical Journal Co., 1911. Price, $1.00.

Recent Studies of Cardiovascular Diseases. Medical Symposium Series No. 2. A Reprint of Articles Published in the Interstate Medical Journal. Paper, 216 pp. St. Louis: Interstate Medical Journal Co., 1911. Price, $1.00.

No. 1 contains valuable articles by Noguchi, Ernest Jones, Fordyce, Wolbarst, Wechselmann, Babcock, Hallopeau, Corbus, Dyer, Ravogli, Morrow, etc., as well as a number of "reviews of literature" by members of the editorial staff of the Interstate Medical Journal,—all bearing on the diagnosis and treatment of syphilis.

No. 2 contains contributions by Hirschfelder, Adami, Pottenger, Hare, Taussig, Abt, and others; also "reviews of literature" on topics related to cardiac affections.

These two books include a useful collection of articles, the value of which is further increased by the bibliographic lists appended. It seems somewhat surprising to the reviewer that the date when each of these articles appeared in the Interstate Medical Journal is not mentioned.

The General Field

Conducted by A. G. CRANDALL

Convenience Comes High

Those who compared the luxuries of 1890 with those of 1870 considered that they were living in an environment of great relative ease, but those who contrast conditions of 1912 with 1890 can picture out an even greater contrast.

At the present time, as always, it is the doctor's ambition to live in a style which compares favorably with that of the community. He is in a measure compelled to live that way, or to give the impression that he is not a success in his profession.

Nothing is more unpalatable to the average family than the inauguration of a new policy of economy and, in the doctor's case, if this involves in any sense a confession that the policy of retrenchment is adopted from necessity, it may prove a professional detriment.

Living beyond one's means seems to be as contagious as the measles. The manufacturer charges high prices because he must pay larger wages, and the landlord increases the rents because building costs more. Every one must increase their income to meet the higher cost of living, and every one must keep up appearances or they will be considered as among the "down and out." Intimately associated with these higher expenses is, of course, the introduction of a large number of conveniences, all of which cost money. Department stores, offices, and manufacturing plants must provide greater comforts for their employés, more hygienic conditions, and more rapid methods of delivery of merchandise to patrons. All of this has its cost price.

With this continuous tendency to elaboration, there must come a time when the bubble, constantly expanding, will burst, after which, no doubt, a more moderate mode of life will be entered into through necessity by a large number of people who are now having anything but a simple life to make ends meet.

It is evident that a large number of people need to take a financial rest cure.

A Still Greater American Fraud

Dr. Samuel Hopkins Adams performed a very valuable service some years ago in his exposure of certain quack-medicine abuses, although it is quite possible that, like other enthusiasts, he may have been a little too indiscriminate in his attacks.

It would be interesting to know what the same authority might have to say upon a certain professional practice, knowledge of which is being handed out to the public, and which is known as fee-splitting.

It is an unfortunate element of human nature that where a suspicion rests upon a few individuals of a class, only a little stretch of imagination is required to have it take in the whole class.

No intelligent physician can fail to see that the lay public is sure to lose confidence in the general integrity of

the medical profession if they get the impression that fee-splitting is common.

It will raise a doubt in the minds of the interested family wherever an operation is advised that from the lay standpoint cannot be seen to be immediately necessary. There must be some way devised to vindicate the mass of the profession from any such suspicion or American physicians are sure to enter upon evil days.

This is a question of vital importance to both physician and patient. Imagine the effect on the layman who may have read the Hippocratic oath after his suspicions have been aroused regarding a surgical case in his family.

Psychoanalysis

A new and far-reaching discovery has been announced and it behooves us all to keep the lid on our mental characteristics carefully fastened down.

It has been discovered by an eminent alienist that repression of an impulse to do wrong is a great mistake. The errant impulse, instead of evaporating and becoming non-existent, simply bides its time and comes back with increasing impetus at regular intervals until at last an explosion occurs and the act, which has been under the ban of conscience, takes place.

Of course, this new discovery is exactly the opposite of all moral precepts which have been handed down for several thousand years, whereby it is supposed that repression of an impulse to do wrong has the effect of strengthening the moral nature, thus making it easier as time passes on to keep in subjection the impulse to do wrong.

A certain type of alienists have been greatly in need of new material with which to illuminate their mental flights into the Heavens far above the profession in general. Psychoanalysis fills the bill.

At the age of 8 the small boy has an almost irresistible impulse to destroy the peace and happiness of a setting hen. Forcibly restrained by parental authority, the hen is allowed to remain in peace. Not so the unfortunate boy. A tremendous impression has been made upon his subconscious personality. Time passes. At the age of 42 it is plain to see that there is something wrong with him. He has rheumatism in his left knee. It seriously modifies his gait. Enter psychoanalysis. One by one the deep secrets of the subconscious mentality of the patient are laid bare, and the patient is put through the third degree by the new method of psychoanalysis. Whereupon by a process of deduction from which there can be no possible variation direct connection is established between the interrupted hen exploit and the physical disability of later life.

Psychoanalysis is a great discovery. The alienist ought to be able to use it to excellent financial advantage, especially if he sets out to publish his analyses of public men in the Sunday newspapers.

Meteorological Mystery

Those who have shivered through a long cold winter and are now facing a coal strike, which may lead to more shivering next winter, would like to know a little more about the weather program.

The summer of 1911 produced a large surplus of heat, a surplus which at times was very embarrassing. Heat expands and rises. Apparently never did so much hot air ascend into the zenith in one summer as in 1911.

The average coal buyer would like to know what has become of that hot air and why it should be wasted so; he would also be glad to know where an enormous and unnecessary amount of cold air came from during the last three months. Did the hot air somehow or other succeed in disturbing the balance of the poles and send the cold air down to take its place?

These questions become more acute as the prices of coal and ice advance.

Lost Arts

Discoveries showing the arts and crafts of an earlier civilization often lead to wonder how certain effects could have been produced. A knowledge of the manufacturing process has died out with the era of its civilization.

For a long time the art of printing was regarded as a most valuable discovery. There are times now when considerable doubt exists on that subject.

The small printing press of an earlier period was a serious proposition. It had a real duty to perform and the printed sheets which finally came forth, after a tedious process of incubation, had a serious message to deliver.

The printing press of the present day is a small item in an enormous business. The most astute business minds concentrate upon the question whether doubling the output, irrespective of the quality of the product or influence which it may produce upon the community, may yield an increased profit.

Viewed from the standpoint that any large business which does not pass beyond the border line of criminality is legitimate, publishing enterprises, as a generality, have their place in the present age of overproduction, but it is a question whether 90 per cent. of the present productiveness of the printing press could not be profitably dispensed with by people in general.

The original function of the printing press seems to be rapidly becoming one of the lost arts.

The Science of Nutrition

To do and not overdo constitutes the principal basic problem of personal hygiene.

Few solve the riddle to their own satisfaction, and no one to the approval of any one else.

The man who devotes too much assiduous attention to his business is overdoing it and is consequently foolish from the standpoint of his interested friends. On the other hand, if he guards himself carefully against overexertion he is lazy and a loafer.

The woman who is careless and reckless about her diet assumes spiritual proportions and an incidental fragility of temper and can rest assured that her friends are fully aware of her shortcomings. On the other hand, if she devotes much attention to problems of nutrition and thereby finds herself deprived of the straight front, she is correspondingly subject to disapproval, at least by her dressmaker.

It is said that bones and a bad temper usually live in the same house. On the other hand, much adiposity undoubtedly conduces to a placid disposition, reluctance to exercise, and a weak heart.

It will be remembered that one of Dickens's characters kept a pair of scales at her plate and weighed each particle of food carefully during a meal. Naturally she was given to much introspection, which is about the least de-

sirable condition of the mind to be imagined.

The fact is that the thousand and one speculations which occupy to an enormous extent the literature of medicine and hygiene are based upon the theory that man, in the abstract, cannot have that which is supposed to be free to all, viz., fresh air and exercise.

If a few succeeding generations could be permitted to enjoy these two twin blessings of nature, problems of nutrition and the long series of physical disabilities, more or less associated therewith, would be eliminated from consideration.

This is a wonderful age, and it is the design of great philanthropists with money to invest to extend the privilege of profitable employment to multitudes of semiheathens who reside in various remote regions unequipped with modern conveniences. In this way they can learn to labor diligently for their daily bread and perhaps get a little surplus with which to consult the doctor about their new crop of occupational diseases. Meantime those who furnish this uplifting employment, at considerable profit to themselves, will diligently inculcate among their personal associates the doctrines of the simple life.

Adjusting the Ear

Dr. Woods Hutchinson says that if the human ear is considered from the external standpoint of ornament there will be found many instances in which it is not a success.

The ear is fearfully and wonderfully made internally, and there are many instances in which a similar phenomenon is fully evident from the outside.

The human ear, like the human foot, is prone to show considerable increase in size after adult age has been reached. A girl who can easily wear a No. 2A shoe at 18 is apt to experience considerable difficulty in wearing a No. 4 at the age of 30. Her ears may show similar expansion.

Whether the increased size of the ears in later life is due to mental attributes or to some other cause does not seem to have been yet made clear by scientists.

However, there is a deeper significance associated with prominent ears. Although the American merchant marine has disappeared from the broad expanse of the ocean, the general principles of navigation of sailing vessels have not been forgotten. Just as the manipulation of the canvas on a yacht can reflect the wandering air currents, so may the position of the ears reflect the currents to the advantage or disadvantage of the eardrum. The external ear, viewed from this standpoint, becomes a very serious proposition, and a prominent surgeon has outlined a plan by which the natural adjustment of the ears may be modified to the great advantage of the wearer, even if, as might easily seem to be possible in some instances, it does not simplify the process of locomotion on a windy day.

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Original Articles

NOTES ON THE SURGERY OF THE KIDNEY.*

BY W. WAYNE BABCOCK, A.M., M.D.,

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PHILADELPHIA, PA.

RENAL SURGERY is largely a development of the last thirty years. Although the first nephrectomy was done by Wolcott in 1861, there were few successful operations for the removal of the kidney prior to 1880, and the first successful nephrectomy in France was not performed until 1884. Conservative operations upon the kidney are of even more recent development. Nephropexy was introduced by Hahn in 1881, but this and the operations of nephrotomy, nephrolithotomy, nephrostomy, and resection of the kidney, and the plastic operations upon the ureter, have only been perfected during the last ten or fifteen years.

Clinical experience and experimental evidence indicate that life may continue despite the very extensive destruction of renal tissue. A patient may live with but a third of a single kidney functionating, and the regenerative capacity of the organ is such that, given asepsis, one kidney may be removed and portions of the remaining kidney successively excised at repeated operations with the continuance of a fair degree of health.

Traumatism.—After crushing injuries involving the renal substance spontaneous repair is usual. Even though the kidney substance be ruptured in many places and there be an associated extensive hematoma from effused blood, healing without operative intervention often occurs. Rarely is operative intervention required or desirable except when the ureter has been divided or the pelvis of the kidney so extensively ruptured that marked urinary infiltration occurs or progressive hemorrhage threatens the patient's life. I have seen the flank and most of the right side of the abdomen filled by a mass after rupture of the kidney, with spontaneous absorption and recovery.

* Read before the Surgical Section of the Medical Society of the State of Pennsylvania, September 26, 1911.

Operation should not be done for crushing injury of the kidney unless there be evidence of intraperitoneal leakage, progressive hemorrhage, urinary extravasation, or of sepsis. Many of the operations done for this condition have been entirely unnecessary.

Renal Decapsulation.—Deliberate incision or decapsulation of the kidney exerts an alterative influence upon the organ which is not fully understood. The removal of the capsule may to some degree relieve tension. Adhesions occur, new blood-vessels sprout from the adjacent tissue and unite with the cortex, and there is formed a thick and very vascular new capsule, which gives to the organ a new and additional source of blood-supply. Gradually, however, this thick and very vascular capsule becomes, like other forms of scar-tissue, more fibrous and less vascular, so that eventually the blood-supply through the cortex is decreased. If the renal disease has not been cured during the period of time that the new capsule was vascular, it now tends to increase in intensity, and the old symptoms may recur and progress to a fatal issue. Two of our patients had advanced parenchymatous nephritis with repeated attacks of uremic convulsions and some edema. In one the decapsulation of one kidney gave a great degree of relief for over a year, when the convulsions recurred. Decapsulation of the other kidney was then done; the patient resumed her work, and during the two following years had but two convulsions. Eventually, however, the condition progressed to a lethal ending. The second patient, after decapsulation of both kidneys, from being bedfast was able to resume her work, but a year later became nearly blind from albuminuric retinitis, and the symptoms progressively increased until she succumbed. It is our opinion that mild forms of nephritis often recover after decapsulation; probably some of these would recover under medical measures. In a case of acute interstitial nephritis with the formation of miliary abscesses the patient recovered, apparently because we decapsulated the residual kidney and scarified the cortex. Patients with high-grade parenchymatous change may be given a respite for from six months to several years, but it is probable that their symptoms will eventually recur. In such cases a secondary decapsulation is to be considered. In those forms of parenchymatous nephritis with marked general edema, the relief is, as a rule, so transient as to make the operation of questionable value. We have been surprised, however, to find that even these patients withstand the operative procedure surprisingly well, and have less evidences of postoperative shock and anuria than would be expected. Both kidneys may be decapsulated within ten or twenty minutes; spinal anesthesia, rather than ether or chloroform, should be employed.

Essential Hematuria, or renal epistaxis, a form of kidney disease in which the pathological changes are so slight that the microscopist may deny that they exist, is usually permanently relieved by decapsulation or nephrotomy. Before this is employed, tuberculin should be tried as well as, usually, turpentine or other medicinal measures. An intrapelvic injection through a ureteral catheter of a solution of adrenalin, highly praised by Young, was followed in one of our patients not by a decrease of hematuria, but by the development of miliary abscesses of the kidney and death.

Resection and Suture of the Kidney Substance is entirely feasible. Fourteen years ago I removed a calculus through the kidney, sutured the organ, and closed the wound without drainage. At this time I found record of but one other case in which this had been done. At the present time incision and suture of the kidney is of common occurrence. In suturing the kidney we have always employed catgut, and on account of the softness of the renal substance and the direction of the renal tubules have carefully introduced mattress sutures, which serve to clamp the sides of the kidney together. (Fig. 1.) These sutures not only secure approximation, but control hemorrhage, so that

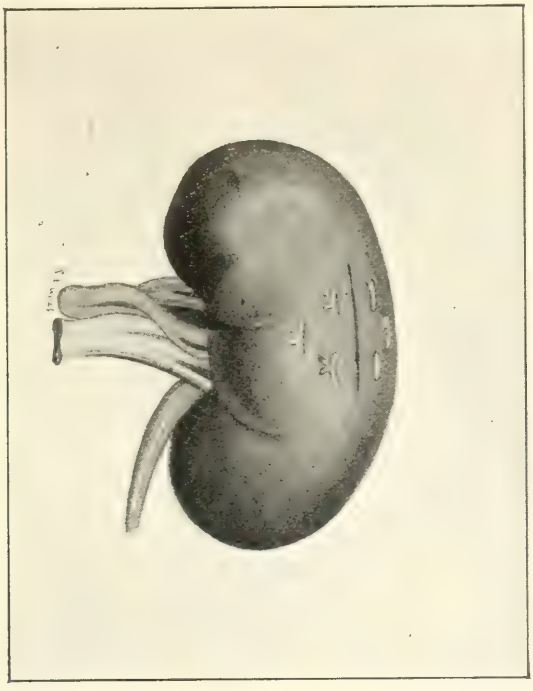

Fig. 1.—Illustrating method of suturing an incision into the renal pelvis. The mattress sutures control hemorrhage, prevent urinary leakage, and usually obviate the necessity for drainage.

ligation of the divided renal vessels is rarely necessary. A pole, or segment near the equator, of the kidney may be removed and the wound closed in a manner similar to that described. Some months ago we found the central third of a kidney largely destroyed and cystic from the presence of a coral calculus. (Fig. 2.) By V-shaped incisions the middle segment of the kidney was excised and the poles of the kidney united by deep and superficial mattress sutures. These sutures satisfactorily approximated the poles and controlled the bleeding vessels. The wound was closed without drainage and the patient promptly recovered without unfavorable symptoms. (Fig. 3.) For localized abscesses, tuberculosis, necrosis, or non-malignant new growths, nephrectomy is, as a rule, indicated; with the other kidney absent or seriously diseased, how-

ever, one would be compelled to consider resection as a possible method of operative relief. In no case should nephrectomy be done without estimating the functional capacity of the other organ.

During operations requiring incision of the kidney substance hemorrhage may be controlled by pressing the lips of the wound together, by introducing the finger or other plug into the wound, or by constricting the renal pedicle between the fingers. The kidney may rest upon the palm of the hand, the pedicle being compressed as it passes between the fingers. (Fig. 4.) The renal incision may be made by a knife or fine wire. In freeing the kidney or in

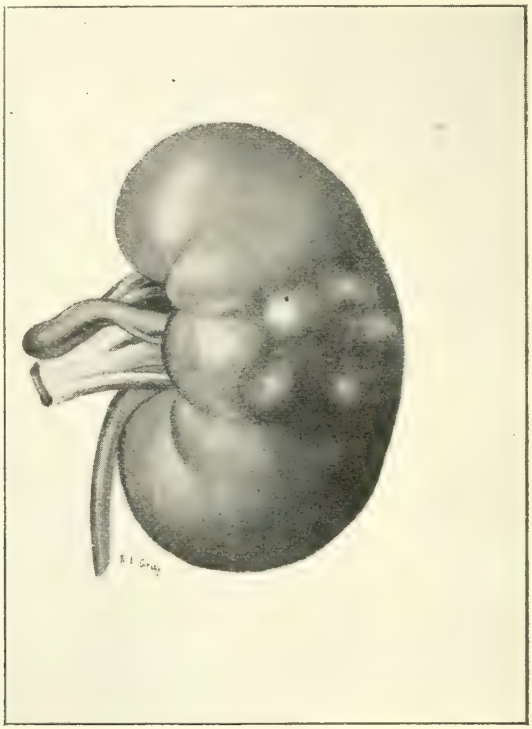

Fig. 2.—Kidney showing cystic dilatation of calices associated with coral calculus. Preliminary to resection.

decapsulating the organ the operator must proceed with gentleness and caution. Anomalous blood-vessels may enter the kidney, especially at the poles, and one should note carefully the character of any bands of adhesions to the cortex. But slight traction should be made upon the kidney in freeing it. In a number of instances the surgeon has accidentally avulsed the organ, the kidney flying from the wound and a furious and, indeed, usually fatal hemorrhage following from the torn vessels. This catastrophe has happened at the hands of surgeons of great skill, and is a solemn warning against undue haste or force in the delivery of the kidney. If the organ is very adherent, the operation will be simplified by at once incising the capsule to the cortex and then carefully enu-

cleating the kidney from within its capsule. It may be recalled that the large polycystic kidney is usually a congenital and bilateral condition, and therefore is hardly amenable to operation.

Tuberculosis and Malignant Disease.—Small miliary tubercles in the renal substance may at times recover spontaneously just as they do in the lungs, and are to be given the benefit of treatment including the careful use of tuberculin products, and in some cases decapsulation and scarification of the cortex. Nephrectomy is indicated in extensive unilateral involvement of the kidney.

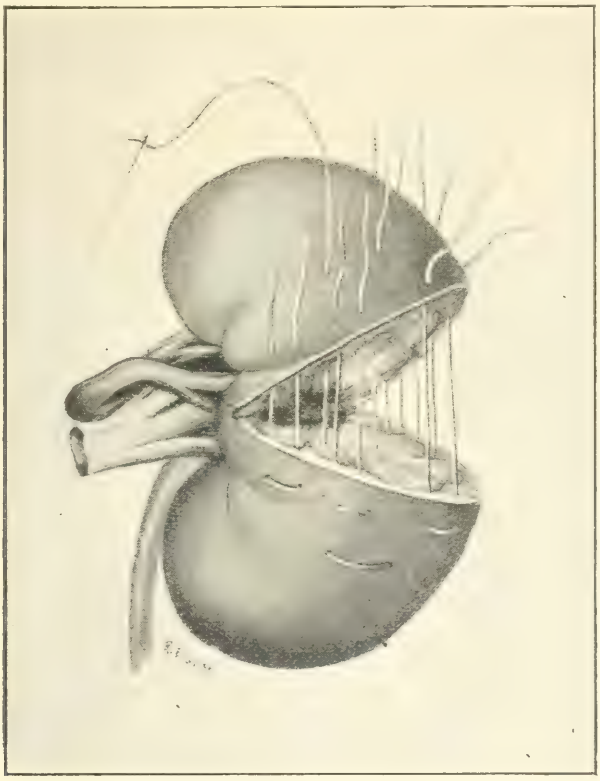

Fig. 3.—Illustrating method of suture after wedge-shaped resection of the middle third of the kidney shown in Fig. 2. No drainage was required in this case.

All forms of malignant disease require early and complete nephrectomy, the end-results in sarcoma being poor, in hypernephroma fair, and in epithelioma of the pelvis good.

Nephrolithiasis is of especial interest to the surgeon. We are learning more and more about the frequency with which calculi are found in both kidneys or recur after operation. In about one-third of the cases both kidneys are involved. The large calculi, especially those of coral form, are often "silent," the patient going for many years without symptoms because the stone is imbedded in the kidney so that it does not move and does not obstruct the flow of

urine. I believe that recurrent calculi are, as a rule, the result of infection or of residual calculi. It is often difficult to remove all fragments, and a stone may easily be overlooked in the pelvis or ureter. These residual concretions and the dilated pockets and calices left after the removal of stones interfere with normal drainage, favor stagnation and fermentative changes in the urine, and are important causes of recurrent deposits. We find it better to remove stones through incisions in the renal substance, rather than through the wall of the pelvis or ureter. Even stones in the upper ureter may often be milked

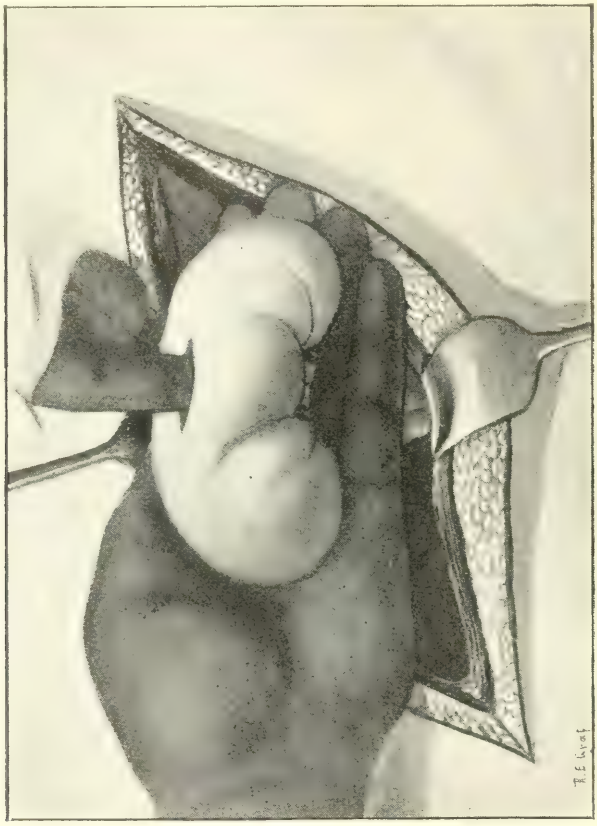

Fig. 4.—Digital exploration of the pelvis of the kidney, showing method of controlling hemorrhage by clamping the vessels of the hilum between the fingers of the supporting hand.

back into the pelvis through the renal incision. Such incisions are more accessible and more readily sutured than incisions through the pelvis; they heal rapidly and do not so often cause secondary fistulas that may later necessitate a nephrectomy. Of course, for greatly pouched or dilated pelves plastic operations and pelvic resections such as those successfully employed by Murphy and others are to be used.

Calculous anuria is grave and requires prompt removal of the stone. It was formerly advised that if the disease were bilateral the better kidney should

first be operated upon and then at a later time the remaining organ. We have found it entirely feasible to operate upon both kidneys at the same time. Properly performed, the double operation does not, as a rule, seriously increase the shock, and permits one to leave no irritating factor nor cause of calculous anuria behind. We have found it likewise entirely feasible to operate repeatedly upon the same organ. Nine years ago I opened both kidneys of a patient after she had had a violent attack of calculous anuria. This patient is now living, although she has had a total of seven operations upon her kidneys, including a nephrectomy. The kidney which now remains has been opened on three different occasions and stones removed, the last time after the nephrectomy. A second patient has had seven operations upon her kidneys by various operators. From this patient I removed the left kidney, although the right had been repeatedly opened for the removal of stones and although catheters had been worn continuously in both kidneys for eighteen months. As a final evidence of the tolerance and recuperative power of the kidneys the patient has continued well, although she has since married and given birth to two children.

In illustration of the renal tolerance of surgical intervention, the following cases, in each of which five or more operations have been performed upon the kidneys, are reported:—

Case I. *Recurrent Nephrolithiasis; Six Nephrotomies or Nephrolithotomies and a Nephrectomy, with Recovery.*—Mrs. H. D. M. Aged 68. Multipara, of spare build, sallow complexion, and with well-marked arteriosclerosis. Attacks of indigestion, violent headaches, and sacro-backaches began nearly thirty years ago, with marked dysuria and urinary tenesmus. Nine years ago a plastic operation and ventral suspension were performed for procidentia. Six months later a sudden attack of calculous anuria developed, with delirium and a temperature reaching 104°. The anuria lasted twenty-four hours, and, the fever and delirium persisting, on the sixth day of the attack I opened both the kidneys, draining a large left uronephrosis and removing a large coral calculus from the right kidney. The patient had never had pain on the right side. One year later, however, pain developed upon the right side, and the skiagraph showed the presence of calculi in both kidneys. The abdominal walls were so thin that the stones in the shrunken left kidney could be palpated. I again simultaneously opened both kidneys, removing 4 stones from one side and 3 from the other. The following year a small pyelonephrosis was found on the left side, which was drained under local anesthesia. The left ureter was apparently obliterated and a troublesome urinary sinus persisted, so that a few months later, in January, 1905, I removed the left kidney. A year after this, renewed colic having occurred on the right side, I opened the right kidney for the third time and removed 5 stones of moderate size. This patient, therefore, has had a total of 7 operations upon her kidneys, and since January, 1906, has been free from renal colic. The urine now has a specific gravity of 1008 or 1010. There is polyuria, slight albuminuria, and varying amounts of mucopus.

Case II. *Recurrent Nephrolithiasis; Seven Operations upon the Kidneys, Including Nephrectomy; Recovery; Marriage and Pregnancies.*—Miss N. K. Aged 26. Poorly developed. At 16 had "la grippe" followed by vesical symptoms. When she was 18 years old, stones were removed from the right kidney. The wound healed in three weeks. A year later pain developed in the left side, and, at 20, from 4 to 6 small stones were removed from the left kidney. This was followed by the formation of a succession of small abscesses. Permanent tube drainage was instituted upon each side. About six months later, the left nephrostomy opening was enlarged under local anesthesia, pus evacuated, and calculi removed. I first saw the patient in October, 1907. Catheters

had then been continuously worn in both kidneys for eighteen months, and had caused considerable trouble, especially at times, from the difficulty of reintroducing them. By the injection of colored fluids the left ureter was found to be obstructed. The skiagraph showed the presence of multiple stones in the region of the right kidney and none in the left. Quantities of fetid urine and pus could be expressed from about the left kidney. In November, 1907, under spinal anesthesia, I removed the left kidney and evacuated perinephritic abscesses. The cause of the recurrent calculi was found in a stone which completely blocked the upper end of the ureter. The kidney was largely destroyed, and contained many cavities filled with fetid pus and many imbedded calculi. The right nephrostomy opening was dilated, and the patency of the right ureter established by the passage of ureteral catheters. A few weeks later it was necessary to re-establish temporarily the drainage on the right side. Shortly after this all sinuses closed, and a few months later when the patient presented herself she had gained 25 pounds in weight; the urine was clear, but the sediment showed a moderate number of leucocytes. This patient has since married and has been delivered of 2 healthy children. The patient has, therefore, continued in good health for nearly four years after the last operation, although her residual kidney had twice been incised for the removal of stones and was subjected for eighteen months to the constant irritation of a drain.

Case III. *Recurrent Nephro- or Uretero-Lithiasis and Pyelitis; Six Nephrolithotomies or Nephrotomies, with Recovery.*—Mr. B. A. B. Broker. Aged 48. Developed paroxysms of pain in the left hypochondrium with severe vomiting sixteen years ago (1895). These attacks incapacitated him for from a few hours to fifteen days, and he was treated for gastric ulcer. July 6, 1899, I opened the left kidney and was able to slip back through the pelvis a cylindrical calculus that blocked the upper end of the ureter. The kidney was sutured and the overlying tissues closed without drainage. Although the patient seemed in robust health pyuria and phosphaturia persisted, and in June, 1908, as the X-ray revealed shadows in both kidneys, the right kidney was opened, and a large coral calculus removed. A left nephrotomy was also done, but no calculus was found upon this side. The wounds were closed without drainage. Pain developed in the right side, and in October, 1908, the kidney upon this side was opened and drained for suppurative pyelitis. The drainage continued for two months. In May, 1909, the right kidney was opened for the third time, a catheter was passed down into the ureter and left in this position for five days. After the removal of the catheters 2 ureteral calculi the size of grains of wheat passed. The following day there was a brief attack of severe left renal colic. In May, 1909, there having been a recurrence of the left renal colic, the left kidney was opened for the third time,—this being the sixth operation upon the kidneys of this patient,—and a calculus found in the upper ureter, which was slipped back into the kidney and removed with some difficulty through an incision in the renal substance. The wound healed within a month, and since that time the patient has been in good health, although a moderate phosphaturia continues.

The following case histories are presented to illustrate the influence of renal decapsulation in nephritis:—

Case IV. *High-grade Parenchymatous Nephritis with Uremic Attacks Progressing Despite Treatment; Bilateral Decapsulation; Marked Improvement Enabling the Patient to Resume Her Work; Return of the Symptoms Seven Months Later, with Progressive Loss of Sight and Death.*—Miss M. R. Aged 20. Stenographer. Mother died of Bright's disease at 44, and several aunts on the mother's side are said to have had renal disease. The patient had measles and scarlet fever in childhood. Present illness of nineteen months' duration. Pains in the back, frequent urination, later edema of the face and extremities, and repeated uremic convulsions. The patient had been treated five weeks in one hospital and three weeks in the Samaritan Hospital without benefit. The urine had a specific gravity averaging about 1020; there were 18 grams of albumin per liter and many granular and epithelial casts. I decapsulated both

kidneys on April 10, 1910. Following the operation the edema disappeared, the urinary albumin was reduced to a trace, and the number of casts was greatly diminished. Five months later the patient resumed work as a bookkeeper and typesetter, which she continued for nearly five months. In the latter part of January, 1910, the vision suddenly became impaired, and evidences of advanced albuminuric retinitis were found. The urine then had a specific gravity of 1011 and contained considerable albumin. The vision progressively diminished and the general symptoms recurred and progressed until death a few months later. In this patient the operation gave a respite from the symptoms of nearly ten months.

Case V. *Chronic High-grade Parenchymatous Nephritis with Many Uremic Convulsions; Decapsulation of One Kidney Followed by Improvement for Nearly Two Years; Decapsulation of the Second Kidney with Improvement for Two Additional Years; Recurrence of Symptoms and Death.*—Miss M. C. Aged 30. Occupation, housework. Father died of tuberculosis and one brother was hydrocephalic. Previous history: double pneumonia in infancy; measles and whooping-cough as a child. In April, 1905, the patient fell from a ladder, injuring the lower part of the spine. She grew progressively weaker and in July was confined to bed. Attacks of unconsciousness with convulsions developed, which continued until the spring of 1906, when she was brought to the Samaritan Hospital. The coccyx was removed and the right kidney decapsulated. Following the operation the urine greatly increased in quantity and the patient had splendid health for a year. In 1907, the convulsive attacks with unconsciousness recurred at intervals of several months; later they increased in frequency, and by June, 1909, occurred almost daily. The urine contained much albumin and many casts, and the vision in the right eye was reduced to light perception. At this time the left kidney was painful and tender. The patient was readmitted to the hospital in September, 1909, and the left kidney decapsulated. The operation was done under stovaine and required twelve minutes. Improvement again followed the decapsulation, although the urine did not become free from albumin or casts. In March, 1910, edema developed below the knees and was temporarily relieved by treatment. On July 18, 1911, the patient married. On August 14 of the same year, she was taken with vomiting and diarrhea, followed by anuria and coma, which resulted fatally August 17th. The patient had no recurrence of the convulsions after her last operation.

Case VI. *Illustrating the Ineffectiveness of Renal Decapsulation in Acute Parenchymatous Nephritis with Marked Anasarca; Transient Improvement after Bilateral Decapsulation.*—Miss C. G. Aged 14. Admitted to the Samaritan Hospital October 15, 1907. Edema of the face began two weeks before admission and had progressed since. The anasarca became very marked, and on November 2d a bilateral decapsulation was done. Three weeks later the edema had almost entirely left the upper extremities and face; the swelling of the limbs was much less and the condition seemed to be much better. Later the patient relapsed and she left the hospital about ninety days after admission without substantial improvement.

Case VII. *High-grade Acute Parenchymatous Nephritis with Marked Anasarca; Uninfluenced by Bilateral Decapsulation.*—S. H. Aged 3 years. Admitted to the Samaritan Hospital December 1, 1910. Anasarca had begun two months before admission. Urine contained 8 per cent. of albumin by the Esbach method and was almost solidified by boiling. Many hyaline- and a few blood- casts were present. Specific gravity 1033. Despite daily hot packs and the most painstaking therapeutic measures under the direction of Dr. McKee the little patient became progressively worse, the pulse ranging from 90 to 140, the respirations between 24 and 46. One hundred and ten days after admission we administered spinal anesthesia and decapsulated both kidneys. The operation required eight minutes, and the patient's condition seemed much better during than before the operation. The operation, however, seemed to have little or no effect upon the uremic and dropsical condition, which progressed to a fatal issue five days later.

EPILEPSY IN ADULT LIFE IN ASSOCIATION WITH THYROID DISEASE.* A Report of Seven Cases.

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I SHALL NOT attempt here to review in a systematic manner the subject either of epilepsy or of thyroid disease. In view of the excellent treatises on these subjects in the standard textbooks of medicine and of nervous diseases, such an attempt would be, to say the least, supererogatory. My intention is to present to the Society clinical evidence of some relationship between structural alterations in the thyroid gland and the development of epilepsy in young adult females. These patients constitute the bulk of the female epileptics furnishing a definite history of the development of the attacks after the age of 20 whom I have treated at the Mathilde Adler Loeb Dispensary of the Jewish Hospital during the last two years. I have added one very interesting case that I saw recently at St. Joseph's Hospital through the courtesy of Dr. Max Bochroch. In this patient the epilepsy developed at the age of 15.† But as the case presented many features in common with those shown by my own patients, forming, as it were, a connecting link between the cases that present thyroid enlargement without signs that would class them with Graves's disease and a case that is one of genuine exophthalmic goiter, I have not hesitated to include the case in this report.

Very little weight has been attached by the standard authors on epilepsy to the subject of excessive, deficient, or perverted internal secretions as the causative or determining agents in the etiology of the epileptic attack; Gowers[1] believes that no inherited morbid nervous state outside the nervous system predisposes to epilepsy: none of the internal secretions are mentioned specifically as predisposing causes; the fact that attacks of epilepsy often develop at the time of the first menstruation is ascribed to the general heightened irritability of the nervous system at this period rather than to any effect on the nervous system of ovarian, thyroid, or other internal secretions. Oppenheim[2] recognizes the connection between ovarian disease and epilepsy, but considers the fits in this case to be reflex in character. He mentions the fact that Bastin has considered the question of the direct effect of the secretion of the thyroid or

* Read in part before the Clinical Society of the Jewish Hospital, Dec. 4, 1911, under the title "Epilepsy in Adult Life in Association with Thyroid Disease, with Other Observations in the Domains of Epilepsy and of Thyroid Disease," and in part, after cases had been added, before the Philadelphia Neurological Society, Jan. 26, 1912. Some of the cases herein recorded were shown at each of the above meetings.

† My cases originally numbered 4, excluding Dr. Bochroch's case. In 3 of these the epilepsy developed after the age of 20. In a discussion before the Clinical Society of the Jewish Hospital Dr. Karpeles mentioned a case under his observation, which he was kind enough to allow me to examine and report. A short history of a seventh case in which epilepsy was associated with persistent tachycardia was seen by Drs. Potts and Lindauer and added.

parathyroid glands in the induction of the attack and has endeavored to establish a direct relationship between the two conditions. I have searched the literature and have been unable to find more than cursory reference to Bastin's observations. It is probable that this author did not publish a lengthy report.

Despite the fact that these authorities lay little stress on the relationship of diseases of the generative system to epilepsy, references to the epilepsies of menstruation and to the so-called ovoepilepsies are to be found scattered throughout the literature. Davidson[3] reports 33 cases of epilepsy and hystero-epilepsy—at least 23 of uncombined true epilepsy—in which there was a distinct relationship of the attack to the menstrual period and in at least some of which the epilepsy showed itself for the first time simultaneously with the onset of the first menstruation. The author considers that as the result of oöphorectomy 23 of these cases were cured, 5 were improved, and 6 showed no change with regard to the condition of epilepsy. Whatever scruples conservative gynecologists of the present day may entertain as to the advisability of resorting to this extreme means of combating the nervous affection, there is no doubt that in times past many a sound ovary has been removed under much less provocation. When the undoubted action of the ovarian secretion and especially the secretion of the corpus luteum is taken into account, there can be no doubt that diseases of the ovaries and anomalies of their secretion act on the nervous system in more than a reflex way.

No less potent than the secretion of the ovaries in its effect on nervous tissue are the secretions of the thyroid and parathyroid glands. We now know that the fatal tetany that was wont to develop in patients after complete thyro-parathyroidectomy is to be ascribed to the missing parathyroid secretion. The functions of the thyroid gland are concerned, in some way at present not at all clearly defined, with metabolism, especially with changes that affect the nitrogenous and fatty constituents of the animal economy. It is conceded by practically all authorities that the thyroid has a decided influence on the nervous system, especially the sympathetic nervous system; on the skin and epithelial tissues, on the osseous and also the generative systems. It is chiefly concerned with the manifestations of cretinism, myxedema, and the various goiters.

That the thyroid gland is intimately associated with the cycle of sexual life is shown by the fact that it undergoes a decided enlargement at the age of puberty, that it enlarges during the menstrual period in women, that it is found almost constantly engorged and enlarged during pregnancy, and that it undergoes some degree of atrophy about the time of the menopause.

Concomitantly with the increase in size of the thyroid during pregnancy and the changes in the ovaries that are shown by the persistence of the corpus luteum, the organism is rendered especially susceptible to the development of maladies of a nervous nature, especially the so-called functional nervous diseases. Especially prone to develop are the neuralgias, chorea, and the various psychoses.

Eclampsia of pregnancy can scarcely be considered a nervous disease; yet, its manifestations are distinctly nervous in character and its convulsions possess but few characteristics *per se* that distinguish them from epileptic attacks.

In the absence of an examination of the urine it would be exceedingly difficult to say whether a given convulsion was of an epileptic or of an eclamptic nature.

Competent authorities have ascribed the renal lesions that are a part of the pathological picture of eclampsia to a primary lack of secretion of the thyroid gland, basing their opinion on the fact that in very many of these eclamptics there is during pregnancy an absence of the normal enlargement of the thyroid that should accompany (Lange) this condition. No less an observer than Dock[4] makes this statement: "That there is a relation between the thyroid and the kidneys is believed as the result of certain observations in eclampsia." He also states "the atrophy of the thyroid in old age may be the result of the decline of the sexual life; the thyroid arteries are said to be sclerosed relatively early." The influence of the secretion of the thyroid gland on eclamptics is made use of in the treatment of these patients. Nicholson[5] recommends that 70 to 80 grains be given daily during the attacks. Thyroid was used by Strumer in a series of 41 cases, with 5 deaths, and by Lobenstine in 6 cases, with 1 death.

In spite of the fact that eclampsia in women is exclusively an affection of pregnancy, pregnancy does not seem to act as the predisposing cause of a superficially similar condition, namely, epilepsy. It is well conceded that during pregnancy there is usually a lessening of the severity or the number of the epileptic attacks. The influence of the thyroid and related glands and of the ovaries is here suggestive. One of the patients here presented (Case III), suffering with exophthalmic goiter, was entirely relieved of her attacks of epilepsy during her successive pregnancies. Another of the women (Case II) is sterile. In a case of epilepsy* developing in adult life, unassociated with enlargement of the thyroid, but accompanied by a well-compensated mitral insufficiency, the onset of the epilepsy began at a delayed menstrual period one or two months before the woman became pregnant for a second time, and was aggravated rather than mitigated during her pregnancies. In another case (Case I), associated at present with mild thyroid enlargement, the epilepsy developed six months after the eclampsia of pregnancy; the patient had previously suffered from an attack of puerperal eclampsia.

This last case is very interesting for the reason that in it we do have the development of epilepsy after a preceding eclampsia; I am not aware to what extent eclampsia and epilepsy usually are associated. In view of the fact that this woman has a large thyroid, which probably always was large, it might be asked why, granting the fact that the thyroid secretion exercises a favorable influence during pregnancy and protects against the development of eclamptic convulsions, she nevertheless developed these convulsions in the course of two successive child-bearing periods. It might also be asked whether, if we concede that in certain cases of epilepsy the thyroid gland exerts an influence, we should expect to find the thyroid gland increased or diminished in size. The answer is that the size of the thyroid is by no means an index of its functional efficiency. In other words, enlarged thyroids are commonly

* Seen at the Mathilde Adler Loeb Dispensary; not included in the 7 cases reported.

found in such conditions as endemic cretinism, and are not infrequent in the early stages of myxedema. Here the enlargement of the gland is to be ascribed to compensatory hypertrophy in which there is an endeavor on the part of the gland to make up for deficient secretion or for an abnormal or in some way altered secretion.

In 3 of my cases* there is a distinct enlargement of the thyroid gland; it is a curious fact that in all these cases there is a history of enlargement of the thyroid gland in other members of the families. In one other case (Case VI) however, there was no thyroid enlargement in other members of the family. Shall we say that in these cases the epileptic attacks may be determined by the thyroid secretion in excess or in deficiency, or are the attacks determined by a perversion of the thyroid secretion, either as the secretion leaves the gland or in the course of its wanderings in the tissues? Or are the attacks of epilepsy and the enlargement of the thyroid simply coincidental?

The consideration of some of these questions would carry us far afield in the regions of the pathology of the thyroid. It is quite true that many of the hypertrophies and other parenchymatous changes in the gland are unattended by symptoms of changes in the function of the gland. Such an authority as Kocher[6] mentions epilepsy among the complications that may accompany deficiency of thyroid or parathyroid secretion, and also regards epilepsy as one of the complications of the thyrotoxicosis accompanying Graves's disease. The author is silent as to the fact that in these cases the epilepsy is simply a coincidence. The context would lead us to believe that his rich clinical experience has impelled him to the conclusion that in certain cases epilepsy is truly dependent on thyroid disease.

In 1 of the 3 cases above mentioned (Case II) enlargement of the thyroid is attended with general obesity. The mental attitude is one of general restlessness, anxiety and forgetfulness of recent events, attended with a rapid, high-pitched, agitated, quavering manner of speech. The woman frequently experiences periods of mental depression, during which she is inclined to weep. For some time after she has had an epileptic convulsion her mind is confused. At the present time she suffers from menorrhagia. Some of the above effects must be attributed to the epileptic convulsions *per se*. Others, chiefly the obesity, the menorrhagia, and the general disturbance of menstruation, to the thyroid condition. In spite of a curettement the woman remains sterile.

Another of the three patients (Case III) presents an enlargement of the thyroid associated with mild thyrotoxicosis. Perhaps the attacks in this case are coincidental; I cannot say that they are not. In all probability they preceded the onset of the thyroid swelling. The woman applied at the dispensary for relief of the attacks without knowing that her neck was enlarged. We could, however, in this case consider the late appearance of menstruation as evidence of some early thyroid disturbance. Her daughter, who has passed

* Cases II, III, and IV. The thyroid in Case I was only slightly enlarged and is not included. The son of this patient also has a thyroid larger than normal (*v.* history of this case).

her fifteenth birthday, presents a thyroid that is larger than we would expect it to be and has not as yet menstruated.

In the case that I saw at St. Joseph's Hospital with Dr. Bochroch (Case III) an enlargement of the thyroid decidedly greater than those in the patients already referred to, and which was operated on once, is associated with the peculiar brightness of the eye that is seen in thyrotoxicosis; in addition, more than the usual amount of sclera was visible below the cornea. Suggestive of a relationship of the thyroid disease to the epilepsy in this case is the fact that the thyroid swelling was first observed at the time of the first menstruation, at the age of 15 years. A few years later, the patient was stricken with her epilepsy in the form of a major attack.

In Dr. Karpeles's case (Case IV) major and minor attacks are associated with goiter and tremor. In still another case (Case V) there is epilepsy together with exophthalmos, but no enlargement of the thyroid gland.

Kocher[6] makes a clear-cut distinction between the pathology of the gland in thyrotoxicosis and its pathology in other diseases of the thyroid. I do not know precisely to what degree border-line conditions are found pathologically and clinically. It seems to me unlikely that affections of the thyroid associated with signs of myxedema should take on the signs of thyrotoxicosis; yet, I can imagine that clinically cases might show some of the features of each of these two conditions. The majority of these cases might be ascribed to a myxedema superadded to a thyrotoxicosis. In spite, too, of Kocher's sharp distinction between the pathological picture of the gland in thyrotoxicosis and that in the simple goiters, I believe that goiters that have been recognized clinically as simple goiters may suddenly or gradually take on the characters of a thyrotoxicosis.

I regret to say that in my own border-line case or cases the blood, beyond the taking of the Wassermann test,—kindly done for me by Dr. Henry Wise,—has not as yet been examined. Kocher regards certain blood-changes as characteristic of thyrotoxicosis. These consist in slight leucopenia; diminution of the polymorphonuclear neutrophiles, sometimes to half their normal number; increase of the lymphocytes, sometimes to twice their normal number, or at least a relative augmentation, and diminution or increase in the number of eosinophiles. The viscosity of the blood is usually lowered and the coagulation time is retarded.

None of the patients has as yet received systematic treatment with thyroid extract. This remedy has long been used in an empirical fashion in the treatment of epilepsy, more perhaps for its general tonic effect on the nervous system than for any specific effect in combating any of the special forms of the disease. I have given it in a desultory manner to one or two of the patients referred to, but have not attempted to use it in increasing doses in any of my patients. The improvement of most of my epileptics on routine bromide treatment (small doses), moderate restriction of salt, appropriate diet, a sufficient quantity of fluids in the form of milk or water, regularity of habits, and a daily bowel movement has been eminently satisfactory.

In the event of a thorough course of treatment with thyroid extract and non-cessation of the attacks I would not be prepared to say that the thyroid extract had nothing to do with the etiology. Perversions of the glandular secretion would not necessarily be counteracted by the administration of the glandular extract. In the cases reported here we have, too, a well-established epileptic habit, perhaps associated with changes in the nervous system that are at least secondary, and which could only with difficulty be affected by the administration of thyroid extract alone.

The pathology of the thyroid gland has been studied in a very comprehensive manner by Kocher. Notwithstanding this, and the fact that the normal histology of the gland is fairly definite, very many changes during the life-cycle of the gland (and also of the parathyroid glands) still remain unexplained. Dock[7] says, "In the normal thyroid tissue there is a marked tendency to degeneration of the blood-vessels, with endarteritis, hyaline changes, and calcification. These alterations have been investigated by Jores, Budde, and Farner. They are not necessarily part of a general arteriosclerotic process." With this degree of normal variation in the histology of the thyroid gland, it is not strange that the recognition and interpretation of pathological lesions, especially when obscure, are matters of considerable difficulty.

The thyroid seems never to have been studied systematically in epilepsy as it has, for instance, at the Phipps Institute[8] in tuberculosis. The gland in the latter disease is associated almost constantly with some pathological lesion. It is hard to study the histology of the gland in epilepsy, first, on account of the difficulty in obtaining a firm hold of our epileptic patients, and, secondly, because of the rarity of deaths from epilepsy alone. Still, the study of the thyroid in cases of epilepsy complicated with nervous and general infectious diseases would be of some value. A general failing in our autopsies is that we neglect a study of what are commonly known as the ductless glands. These include the thyroid, the parathyroid, the thymus, the pituitary bodies, the adrenals, the carotid bodies, etc. It is not strange, however, that these organs are neglected when we consider that the examination of the central nervous system in the necropsy of a general case is either unasked for or refused.

Such institutions as the Craig Colony for Epileptics[9] and the Ohio State Hospital for Epileptics,[10] with their rich autopsy material, have neglected their opportunities in failing to make a study of the pathology of the ductless glands in epilepsy. The investigations of French and Italian observers (Claude and Schmiergeld,[11] Zalla[12]) have established, by examination of the thyroid and other ductless glands in epilepsy, idiopathic and non-idiopathic, from numerous patients of all ages, an almost constant small size of the gland, associated with sclerotic processes, with proliferation of the glandular epithelial cells, and with quantitative and qualitative changes. Zalla believes that the pathological pictures point to hypothyroidism, which, however, he is at a loss to explain. He thinks that some of the changes might have been due to the ingestion of bromides. The parathyroids and the other ductless glands all showed pathological changes.

Before proceeding to the histories of my patients it may be well that I should consider the incidence of epilepsy in certain diseases of the thyroid not considered by Kocher in Keen's "System of Surgery."

I was unable to determine the incidence of epilepsy in cases of myxedema. Dr. Fussell,[13] in reply to a verbal question, replied that it was not infrequent in sporadic cretinism, and that it is not at all of uncommon development in women at the time of the menopause.

As is well known, adiposis dolorosa is a condition closely allied to myxedema. Stern[14] has recently reported an interesting case where symptoms of the two conditions were associated. It is conceded that several of the reported cases of adiposis dolorosa have occurred in epilepties, in just what proportion I do not know. At least one case of adiposis dolorosa was complicated by a brain tumor. It may not be well known that adiposis dolorosa is dependent on disease of the ductless glands, and, of these, first and foremost the thyroid. Seven out of eight of the first autopsies recorded showed undoubted involvement of the thyroid in pathological processes, in most cases with decided involvement of some of the other ductless glands.

It is well known that victims of dementia præcox may suffer from epileptiform seizures, the presence of which may occasionally give rise to the faulty diagnosis of epileptiform insanity. Berkeley[15] has pointed out that sufferers from the catatonic form of dementia præcox resemble cases of thyrotoxicosis in that there is rapid pulse, muscular tremor, hyperidrosis, exaggerated ocular and other reflexes, increased muscular excitability, skin pigmentations, rapid loss of weight, disturbances of menses, and vasomotor paresis. Berkeley had Follis operate in about 10 of these præcox cases, partial thyroidectomy resulting in a complete return of mental and physical health in nearly all the cases. Other cases were markedly benefited by feeding with thyrolecithin. I believe that other investigators proceeding along the same lines have not succeeded in obtaining results so happy.

The histories of my patients are as follows*:—

Case I. *Epilepsy Following Eclampsia; Slightly Enlarged Thyroid.*—A. G., female. Aged 35. Father died at 65 of "old man's consumption," from which he had suffered two weeks. Mother well and hearty. Has been married fourteen years and has had 5 children; has also had 3 miscarriages, irregularly distributed in the series of live births. One daughter has been treated at the Jewish Hospital, suffering with general nervousness; the oldest son now has choreic twitchings. The other children are well.

At the age of 12 years the patient had malarial fever. She remembers no other illness that confined her to bed. She menstruated first at the age of 13 years, and has never suffered any anomaly of this function. Since the birth of a stillborn baby two years ago, she has had a watery leucorrheal discharge.

Ten years ago, after a labor, she suffered from puerperal eclampsia. Nine years ago, when eight months pregnant, she suffered from eclamptic convulsions, for which she was treated at the Episcopal Hospital. During the attacks she remained unconscious or semiconscious thirty-six hours. On the next day she was allowed to go home. The remainder of the period of pregnancy was free from convulsive attacks.

* In the study of all patients except Case VII, a routine examination of the eye-reflexes, tendon-reflexes (biceps, triceps, knee), sensation to touch and pain, gait, station, etc., was made, and, except when otherwise stated, these were found to be normal. In nearly all cases the chest was also carefully examined.

Six months after the birth of the child she suffered her first epileptic attack. The nature of the earlier attacks cannot be clearly remembered by the patient at present. They were preceded for one or two days, however, by a feeling of lonesomeness and were very much more severe and more frequent than at present. She would have about 2 or 3 a month, independently of the menstrual flow. She has been coming to the dispensary for two years. At the time of her first visit the attacks were at least not milder or less frequent than at their onset. At present she suffers about 3 attacks a year, and they are not at all severe. The urine now shows no albumin. The Wassermann test is negative. The thyroid is very slightly larger than normal; it varies somewhat in size from time to time.

The son of this patient is 13 years of age. His father is well. After the birth of the child, which was normal as to time and manner, the mother had several eclamptic convulsions. She never nursed the baby. Until the child was 1½ years old it was always somewhat marantic. Had whooping-cough at the age of 7 years. He never did well at school and at the present time has advanced no farther than the fourth year. His father at one time had St. Vitus's dance. At times the father drinks beer to excess. The boy has had irregular movements of the extremities off and on for a year, and shows a decidedly enlarged thyroid, even larger than we would expect in a boy at the age of puberty. His chorea responded well to treatment by rest, diet, and Fowler's solution, and is not at all to be ascribed to the influence of the thyroid gland.*

Case II. *Epilepsy; Goiter.*—A. M., female. Aged 30. Married. Father died of rheumatism at 55. Mother living and well, except for slight indigestion and the remnants of a goiter. One sister and one brother living and well; none dead. The patient is the youngest child of the family. One maternal aunt and a female maternal cousin have distinct goiters. The goiter in the latter case appeared after marriage. No further family history of nervous, mental, or goitrous disease.

The patient was born without instrumental intervention, and was breast-fed. When a child she had attacks of measles, scarlet rash, and diphtheria. Twelve years ago she had a mild attack of small-pox. There were no other illnesses, with the exception of what I am about to mention. For several years she has had one or more attacks of tonsillitis every winter and spring season. Last spring the attack confined her to bed, and was followed by a purpuric rash and fever, so that for a period of six weeks she was kept in her room. During this entire period and for a month afterward she remained quite free from epileptic attacks. At the age of 13 years she consulted a Pottsville physician for a swelling of the neck which she first noticed about that time. She had not as yet menstruated.

The first attack resembling epilepsy occurred at the age of 25 years. The relationship of this first attack to menstruation is not clearly remembered, nor is the character of the early attacks very definite. It is known, however, that they increased in frequency, and would occur at any time of the day or night. At times they numbered 7 or 8 a day. They were and have been much more numerous and very much more severe at the time of menstruation, or immediately preceding and following this function. The patient does not bite her tongue during the attacks, but passes her urine, and recently has sustained a few scalp wounds from falls. The thyroid is decidedly enlarged. The Wassermann test is negative.

Case III. *Exophthalmic Goiter.*—I. C., female. Aged 33. Married. Father died from an accident. Mother died suddenly at 32. Husband is a brass polisher. The woman has never had any miscarriages. A pair of twins, younger than her other children, died about a year ago, both of pneumonia. In childhood the patient had measles,

* In a case of choreiform twitchings in a girl aged 24 years the above treatment (rest at home, not, however, under the observation of a physician) was kept up for five weeks without successful results. At the time a surgeon believed that the girl was suffering with hyperthyroidism and called my attention to a small enlargement, probably pathological, of one lobe of the thyroid gland.

chicken-pox, and diphtheria. Pneumonia and pleurisy two years ago. No other illnesses. She menstruated first at the age of 15 years; the periods always came one or two days before the average time, and were free from pain. She married at the age of 17. She never had any gynecological trouble. The birth of her first child was very arduous. The first epileptic attack occurred seven or eight years ago while she was reading. As far as I can elicit, the attack consisted in sudden unconsciousness and spasms, and was over in a few moments. She has since had the attacks at intervals varying from two or three days, two or three months, to two or three years. The character of the attacks has not varied. Of late many have been nocturnal. Besides the fact that her husband informs her about them, she can always tell that they have occurred, because of the feeling of weakness, vertigo, and lassitude she experiences the next morning.

At the time of the first examination, the patient presented a decided tremor of the fingers of both hands. The tremor was fine and of rather wide amplitude. The heart was beating at the rate of 120 to 130 per minute; temperature, 99°; respiration, 24.

Since then her general condition has decidedly improved. The attacks have never occurred during pregnancy, and, so far as is known, bear no relation to menstruation. The Wassermann test is negative.

Case IV. *Epilepsy; Tremor; Enlarged Thyroid; Exophthalmos (?); Other "Shaking Spells," Probably Hysterical.*—A. T., female. Aged 23. Single. Father died of tuberculosis. Mother died of strangulated hernia. Two brothers and one sister living and well; none dead. Maternal grandmother had a goiter. No other nervous, mental, or tuberculous disease in the family. Had chicken-pox and diphtheria in childhood. No measles, scarlatina, pertussis, or chorea. Menstruated first at the age of 15 years, at which time she first noticed a swelling of the neck in the region of the thyroid. Her periods have always been regular and normal, except that occasionally they have been attended with some pain. The girl complains of two kinds of attacks,—"shaking spells" and convulsions. She has had these shaking spells ever since the appearance of her first menstruation. At times she would have several a day; at other times they would not make their appearance for a year, during which period she remained free from convulsions also. During these attacks there is present, according to the patient's statement, general tremor and a feeling of intense weakness which causes staggering and disturbances of gait. On one occasion the patient sank to the ground in such an attack and was unable to rouse herself. She had to be helped to her feet. Consciousness was preserved throughout.

The convulsions were first noticed at the age of 18, shortly after the death of the patient's parents, which caused deep grief. Since then, except for an interval of about a year, and as far as she knows during the six weeks she was resting and under treatment at St. Joseph's Hospital, the attacks have occurred, on an average, once in two weeks. They have always been nocturnal, and the patient learns of their occurrence through information furnished by a bed-fellow or from the fact that she experiences depression and headache on the following day. Occasionally, too, she bites her tongue during a spasm, and she usually passes her urine in the attack. The thyroid was operated on by Dr. Nassau at St. Joseph's Hospital three years ago. After operation her neck measured 14 inches in circumference. The circumference now varies between 13½ and 14 inches. The shaking spells and convulsions were absent for a few months after the operation. There is a decided fine tremor of the hands. The pulse is usually slow; it occasionally becomes more rapid than normal, but we cannot say that true tachycardia is present. The eyes are peculiarly bright, and much of the sclerotic shows below the cornea.

Case V. *Exophthalmos.*—M. M., female. Single. Winder of carpet yarns. Father died of cancer of the stomach at 69. Mother living and suffers from pains which she says are rheumatic and neuralgic. One sister living and well. Two brothers dead, one of blood poisoning at the age of 12; the other of scarlet fever at the age of 2. No family history of insanity, nervous diseases, or tuberculosis. Born with harelip and

cleft palate, for which she was operated at the age of 9 years. She came into the world without the assistance of a doctor or nurse, and was not suckled, but fed with a spoon. Never had infantile convulsions. Had measles at the age of 8 years, and membranous croup at about the same time. According to her mother, her eyes were always soft and large.

Menstruated first at the age of 14. At about this age she suffered for a short period with nervous twitchings which were, from the description, in all probability choreic. She was accustomed to menstruate regularly, the flow lasting for about three days. The periods were always attended with much pain. In August, 1910, she fell from a trolley car and struck the back of her head. No wound was produced. She was unconscious a short period and on returning to consciousness found herself in St. Luke's Hospital, where she remained about two days, thereafter returning to work immediately.

Four months later, after some indiscretion in diet and after one of her companions had had a fainting spell she felt disturbed mentally, experiencing to some extent the emotion of fear. She decided to go to sleep, which she succeeded in doing. When she awakened she was told that she had had a fit, and that several persons had been required to hold her down. She had a similar attack the next day, and has had about 75 since the first one. Although there is a definite history of tossing about in the attacks, she has never bitten her tongue or wet her clothing during one of her attacks. She was taken to St. Luke's Hospital, where epilepsy was diagnosticated. The Wassermann test is negative. Eye report: Vision normal. Graefe's, Stellwag's, and Dalrymple's signs all present to a very slight extent. There is also lid trembling on forcibly closing the eyes, as well as pulsation of the central veins. There is some convergence weakness, with low-grade hyperopia and astigmatism.

Case VI. *Goiter; Tremor.*—A. D. (Patient of Dr. M. J. Karpeles). Female. Aged 25. Married. Father and mother both in good health. Five brothers and one sister living; none dead. The patient has 1 child, 7 months old; none dead; no miscarriages. No members of the family have had nervous or mental disease or tuberculosis. The woman's husband is well. The patient has been married two and one-half years.

The patient had diphtheria when a child. She never suffered from chorea, from enteric fever or other infectious disease. She did not menstruate until she was 18 years of age. The flow has always been regular, but was formerly scanty and associated with some pain. About the time of the appearance of the first menstruation the patient noticed an enlargement of her neck (thyroid swelling), which has persisted.

The patient dates her epilepsy from a time five months after her marriage. She was not pregnant at the time. The attacks have varied in number from 2 or 3 a day to 1 every two or three weeks. They partake of the nature of petit mal and are controlled by large doses of bromides. Only once has the patient had a major attack. At times the attack occurs during her sleep (according to the statement of her mother). She is always entirely unconscious that the attacks have occurred. Occasionally, however, she bites her lip in an attack and voids her urine.

The patient complains of the fact that her eyes feel very tired. The pupils react to light and accommodation. Both pupils are eccentrically placed, the right more so than the left, and both are dilated, the right more so than the left. Examination of vision by Dr. Knipe shows O.D. and O.S. both $^{15}/_{15}$; eye-grounds normal; hippus. There is nothing markedly abnormal with the tonsils. The thyroid gland is distinctly enlarged bilaterally, forming a well-defined goiter. The cervical glands above the angle of the jaw are hard and shot-like. The chest is normal. Pulse rate, 96. There is an evident fine tremor of the fingers, similar to that of Graves's disease. The knee, biceps, and triceps jerks are normal. Sensation is normal to touch and is normal to pain over the face, arms, chest, and below the knees.

The patient was subsequently (very recently) admitted to the Stetson Hospital, after suffering from an attack of grand mal, or a succession of such attacks, in which

she remained for a long time in an unconscious or semiconscious condition. Pelvic examination showing an elongated cervix, this was amputated and the uterus curetted. The subsequent history of this patient will be of interest.

CASE VII. *Tachycardia.*—M. M. (Patient of Drs. Potts and Lindauer at the dispensary of the Medico-Chirurgical College). Female. Aged 34. Menstruated late. Epilepsy began at 24. Of late she has been having 12 typical attacks a year. These are preceded by a peculiar painful sensation over the spinal column, and are succeeded by headache. A count of the pulse rate on two distinct occasions—the second time under conditions precluding any psychic excitement whatsoever—showed each time a rate of 120 to 136 per minute. The eyes do not converge well.

In the report of these cases, I do not wish to be understood as maintaining that the thyroid is the cause of epilepsy. I realize full well that manifold lesions of the nervous system are capable of calling forth the symptoms of epilepsy in ways and by mechanisms that we do not very well understand. I have not dwelt at all on the subject of toxic convulsions. I have not endeavored to distinguish epilepsy from an epileptiform convulsion. I am convinced that all the patients that I have exhibited here are suffering from idiopathic or essential epilepsy, and that these patients present some derangement of the thyroid function and structure. Whether the latter is present as an effect or as a cause of the epileptic convulsions I cannot say with certainty; but in view of our lack of detailed knowledge of the functions of the thyroid gland and of the tissue and serological changes that underly the individual epileptic seizure, and in view of the evidence I have presented, a causative influence of the thyroid and other ductless glands on the development of certain cases of epilepsy is suggested and indicated. Even though all cases of epilepsy do not show thyroid changes, or all persons affected with goiters do not show nervous symptoms, it is nevertheless probable that the secretion of the thyroid gland in excess may act on the nervous system as do other toxins, or when deficient or perverted it may fail to neutralize certain toxins that may act on the nervous system of a susceptible individual and occasion the epileptic attack.*

In reviewing the histories of epileptic patients who have come to the dispensary of St. Agnes Hospital, the thyroid of a girl of 17 suffering with epilepsy of a few years' duration was found noted as large. The relation of the thyroid gland to fat formation was noted in a patient with mild exophthalmic goiter who, synchronously with an exacerbation of her symptoms, noted a small tumor, presumably fatty, in her right axilla. This subsequently disappeared when the acute symptoms diminished.

* Since the above article was written 3 articles have appeared in the Journal of the American Medical Association that have some bearing (indirect) on the subject-matter. These are:—

1. Hertzler: "The Relation of Pelvic Disease to Exophthalmic Goiter," Jour. A. M. A., vol. lvii, No. 26, Dec. 23, 1911.

2. Tom A. Williams and John Dunlop: "Adiposis Pituitary Syndrome of Launois, with Narcoleptic Fits and without Genito-urinary Symptoms; Preliminary Report," Jour. A. M. A., vol. lviii, No. 2, Jan. 13, 1912.

3. Louis Neuwelt: "Exophthalmic Goiter and Symmetrical Lipomata," Jour. A. M. A., vol. lviii, No. 3, Jan. 20, 1912.

In conclusion I wish to express my appreciation of the kindness, in furnishing references, cases, and suggestions, of the following physicians: Drs. Spiller, Bochroch, Karpeles, Fussell, McCarthy, Potts, and Lindauer.

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9. *Vide* Reports of the Craig Colony for Epileptics.
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THE INDUSTRIAL STATUS OF EPILEPSY.*

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One of the saddest of the many sad circumstances connected with sickness is the limit it puts upon the earning capacity of its victim. Besides the anxiety about the ultimate outcome of an attack of illness, which may have come as unexpectedly as a thief in the night, every physician knows of the additional distress the family suffers because of the immediate suspension of income and prospective additional expense with, perhaps, nothing to meet it. Under ordinary circumstances of health, the financial struggle with many people, even those apparently prosperous, at times amounts to tragedy. But when the breadwinner of the home circle is laid up, with the possibility of a prolonged "rainy day," and with inadequate resources, the twofold suffering is easier imagined than described. On these occasions it is the doctor, necessarily knowing the most about the difficulty, who lightens the burden of the impover-

* Read before the Convention of the National Society for the Study of Epilepsy and the Care and Management of Epileptics, held in St. Louis, June 16, 1911.

ished, affording help by contributing not only sympathy and time gratis, but sometimes even of his own money resources to meet crying demands.

Such is the industrial or economic status consequent upon the entrance of disease even into apparently well regulated families,—especially the families of extravagant social pretentions, but modest income, which, in the strife of fashion, live "up to the last dime."

To the "working man" and woman stricken with disease, however, provision to meet the contingency is made by beneficial societies, so that often to those connected with them, the income continues uninterrupted during sickness, sometimes in greater quantity than during health and employment, for some beneficiaries of these ubiquitous organizations receive when on the "sick list" benefits from their societies exceeding their weekly wage; and thus, with the exception of the anxiety connected with the progress and prognosis of the disease, may possess their soul in peace. With them "the barrel of meal does not waste nor the cruse of oil fail" until the day when the fully restored invalid returns to labor.

This beneficent state of affairs applies chiefly to the victims of acute illness, to sufferers from self-limited diseases. With the chronically afflicted it is not so well, for the man of prolonged unsound health is debarred from entrance into benevolent societies, and when no longer able to hold his own at the bench or in the mill is dismissed into an idleness that before long means a burden on the family or the State.

With the epileptic it is worse still, and unless he is a person of unusual intellect or resources, as some epileptics are, his industrial status is indeed pitiable. Many such, just because of one solitary inopportune seizure, are debarred from employment even when willing and able to work, and the same condition of being "subject to fits" prevents the sufferer from realizing the financial solace of sick-benefit societies. Being a chronic sufferer, usually out of work, and face to face with the probability, as is commonly thought, of never regaining perfect health, he is ostracized from the bounty provided by industrial prudence for other sufferers. He cannot secure employment because of the antipathy and dread with which people regard his malady. He cannot, because of his handicap, enter into fellowship with the members of the industrial orders, and consequently, unless a man of means, must ultimately become an object of charity, in spite often of anxiety for employment and good mental capacity.

What *can* be the industrial status of a man under such trying circumstances?

There are comparatively few positions for which he is, as a rule, fitted,—not necessarily because of the lack of capacity, but rather because of neglected training when young. His affliction is wrongly thought to stand in the way of the family's procuring for him the instruction needed for industrial success. Besides, the members of the community itself, so poorly informed in regard to the requirements of this omnipresent class of persons, are so distressed by the sight of a man—for a period not as long as would be required for them to lace their shoes—struggling in the throes of an epileptic seizure, or suffering from

the momentary unconsciousness of *petit mal*, that if he happens to be employed by them, and is seen in such a condition, he is immediately sent back to his family, usually never to return.

Men who as a matter of personal vanity cut the tails and ears off their dogs and dock their horses, exposing them forever, thus unprotected, to the irritation of every pest that crawls or flies; women that encourage the merciless murdering of every beautiful feathered creature in order to decorate their ridiculous hats, and workmen who delight to see their favorite pugilist pound beyond recognition the face of a weaker man,—all these are so "tender-hearted" that they cannot bear to see a poor fellow under a great handicap laboring for bread beside them, who may happen to have a fit in their presence—tranquillity alternating with tumult for a few anxious moments—without demanding his dismissal, or running from him as if he harbored a pestilence.

Under the most favorable circumstances, the breadwinning and tax-paying capacity of the epileptic cannot be very satisfactory, and it is thus made less so by inconsideration. Nevertheless, we have known of epileptics who in spite of their malady have contributed liberally to the support of their families. We have had under observation a patient who, until a few years ago, and nearly all through his previous life, averaged about three seizures a month, and, yet, through his own unaided efforts, earned as a book agent the wherewithal to take care of his widowed mother, carry three younger brothers through college, and subsequently look after them until he had secured for them remunerative positions.

Another, formerly a coachman, who, after suffering from accidents as a result of his disease, got a better paying position as packer in a department store, has since reared his family more carefully than many people with much larger income. Before securing the position for him, we informed his employer of the fact that he was an epileptic. Consent to give him a trial was nevertheless granted. That was five years ago, and the employer has never had cause to regret his decision.

Another similarly afflicted, a woman having charge of the linen room in a large hotel, has kept her children at school and supported them in comfort. This woman's husband, who abandoned her and declined to contribute anything to her support and to that of her two children "because their mother was an epileptic," recently accepted a Christmas present from her consisting of a new suit of clothes, which speaks well at least for her industrial status, if not for her wisdom.

Another patient, at present under our care, attained the position of governor of a State with his seizures in comparatively high register before putting himself under our treatment.

Another became the district attorney of a populous county, is now living in well-earned retirement, and has completely recovered from his malady, although hereditary in his family; for careful medication does more in the way of cure than is generally supposed.

We might mention others; although such cases of business prosperity are exceptional, for, notwithstanding the fact that money-bringing occupation is

an important factor in the care, management, and cure of epilepsy, and there are many positions that might be filled by them with safety to themselves and others, yet the difficulty is to secure such employment while the patient is being treated so that the occasional paroxysms which may occur will neither endanger himself nor his fellow-workmen. If such consideration in the way of employment were exercised toward the better class of uncomplicated epileptics, now hidden away in back rooms, just as the power that allures the seed, concealed in the earth, to come into the light and bloom, so the industrial status of these in the light of more considerate conditions would develop at least into self-supporting productiveness.

Just as long as this is hard or impossible, the economic standing of epileptics must necessarily remain a low one, and at least a part of the burden of their care be assumed by others. Yet, when we think of the marvelous things accomplished with and for the feeble-minded for example, a more helpless variety of patients, at Elwyn, under the efficient management of Dr. Martin Barr, and in other similar establishments all over the land, surely more might be done for the epileptic in the matter of finding, for the milder cases, safer opportunities for remunerative labor *outside of institutions* in order that the State might be delivered from the burden of their care and they, in their turn, instead of being drones, contribute, at least, to their own support. What is needed in order to improve the earning capacity of the epileptic is the establishment, in localities where needed, of organizations like the one now in its struggling infancy in Philadelphia—only lacking the touch of a beneficent hand to broaden it into more abundant life—known as The Letchworth Clinic for the Home Treatment of Epileptics and Society for the Securing of their Suitable Employment, and with these organizations should be associated propagandas for the instruction of the community in regard to the care, cure, and prevention of this large class of sufferers, so that accidents consequent upon sudden seizures in epileptics *unsuitably* employed might be prevented, and sanatoria and colonies in consequence relieved of the burden of taking care of a class of semi- or periodic invalids who, under other conditions, outside of institutions, could take care of themselves.

Many a child has been made a cripple for life because the family had not discovered in time that the nurse was an epileptic *unsuitably* employed.

Many a home has been reduced to ashes because an epileptic became unconscious when carrying a light or attending to a fire. Many a breadwinner for a dependent family has fallen from a scaffold, ladder, or roof and lost his life because he was an epileptic unsuitably employed.

Many an automobile accident has occurred and will occur because at the critical moment the chauffeur was taken with an attack, maybe only psychic,—slight enough to escape lay detection.

Many carriage collisions and other casualties have occurred from the same cause,—*epileptics unsuitably employed,*—for there are many epileptics who only lose consciousness for a few moments, without convulsions. Thus, the disease may go undetected until it develops into spasms, as its most palpable manifestation, or until some mutilating or fatal accident brings the victim to the physician.

All of this serves but to indicate that the economic capacity of the epileptic under all ordinary conditions must necessarily be limited, and that measures ought to be attempted in every appropriate locality to improve the earning possibility of this unfortunate class, that is at present as incongruous in its penury amid our vaunted opulence, as a cripple holding an empty cap, all day long, at the door of a bank.

It is not generally known that there are nearly as many people suffering from epilepsy as insanity, that is to say, about three thousand to every two million people; we have nearly three thousand in Philadelphia alone, but few of them sufficiently well off to be financially sufficient unto themselves, most of them verging on indigence, not a few idle, indolent, criminal. A number diseased beyond enduring help, some curable, with a possibility of being restored to normal life, many under proper direction capable of self-supporting work, all of them requiring the direction of comprehensive sympathy, and, because of their mostly neglected helplessness, making an appeal to the initiated so appalling at times that it keeps them from quiet sleep, for surely there is no greater object of pity than a homeless and penniless epileptic, often but the wreck of vanished hope, for there is grief even in their gladness, living in the tombs as it were of pleasanter if fading memories, and seeing nothing in his future but wretchedness and distress. No one wants them; the sanatoria, colonies, and almshouses are full to completion; neither institution nor factory cares to receive them and so they roam from place to place, employed at best only until their disease is discovered, when, like poor Joe, they have to "move on."

THE TREATMENT OF JOINT DISEASES, AND OF CONDITIONS SIMULATING THEM, BY PHYSICAL MANIPULATION.*

By LOUIS VON COTZHAUSEN, Ph.G., M.D.,
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Scientific physical manipulations are beginning to be recognized here and abroad as an adjunct to medicine, but not as a substitute. Medicinal and non-medicinal remedies, when combined, often achieve results impossible to either one alone. The best remedies have frequently proved an apparent failure through overenthusiastic claims and wrong application. Success and consequent recognition require close study, continuous faithful performance, a correct diagnosis, a perfect knowledge of therapeutic requirements and possibilities, and a close acquaintance with the nature, physical and physiological properties, proper technique, contraindications, and possible dangers of the appliances used in manipulative therapy. Not all cases are suitable for any treatment, whether medicinal or non-medicinal. In the literature printed about new remedies we must sift the wheat from the chaff. Non-medicinal treatments should never be ordered by anyone except experienced medical practitioners. They should never be given except by theoretically and practically educated and experienced operators.

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* Read at a meeting of the Philadelphia County Medical Society, March 13, 1912.

In presenting this paper I lay no claim to being an expert orthopedic surgeon, but simply a general practitioner with an experience in, a fair knowledge of, and an enthusiasm for the up-to-date electric, vibratory, Zander, gymnastic, massage, photo- and thermo- therapy apparatus, their indications, contraindications, the technique of their use, etc. I shall not go deeply into this subject, nor consider it systematically, but will simply call your attention to certain results obtained in very obstinate conditions in which drugs seemed to fail, and endeavor to give you such a glimpse into physical manipulations as will arouse your personal interest and cause you to consider strongly the advisability of adding them to your armamentarium.

Synarthroses, or fixed, immovable joints, such as those of the head, are rarely, if ever, treated by physical manipulations and will therefore not be considered here. Diarthroses, or movable joints, include the gliding joints, such as the sternoclavicular; the ball-and-socket joints, as, *e.g.,* the hip; the hinge joints, such as the elbow, and the rotary joints, such as that of the head of the radius. All of these are frequently in trouble, and therefore offer a constant field for treatment by physical manipulations. The nature of the latter depends upon the joint and its disease.

I shall divide joint diseases into true and false,—the latter referring to those diseases or conditions which simulate joint diseases. Other possible divisions are into malignant and benign, into acute and chronic, and into idiopathic, traumatic, and pathological joint diseases. Among the latter I classify all those due to a growth, scrofula, syphilis, gout, rheumatism, tuberculosis, etc., very few of which, except the rheumatic and gouty cases, prove very satisfactory to the physiotherapist. Among the diseases simulating true joint diseases we may, perhaps, justly classify all those conditions which, directly or indirectly, act as preventives of proper articular function, and therefore for all practical purposes may be considered with the true joint diseases.

Every injury to one of the constituent parts of a joint more or less implicates the others. The several parts, as a rule, sympathize, immediately or ultimately, a loss of functional activity often resulting. This might lead to the conclusion that an exact differential diagnosis of the injury is practically unnecessary. Such is, however, not the case. If we wish certain results, we must be sure of our diagnosis, in order to be able to treat rationally. This is particularly important in traumatic cases, in which, frequently, correct, precise diagnoses seem at least temporarily impossible. On such occasions one of the physiotherapist's best friends and most useful appliances, the Roentgen ray, can be used, and this will, as a rule, settle all questions of opinion and dispute conclusively.

Among the diseases simulating true joint diseases we may consider first false ankylosis and conditions of the muscles, nerves, or ligaments which cripple the patient and deprive him of the use of a joint, temporarily or permanently. In false ankylosis, as also in functional neuroses, occupation diseases, chronic and acute sprains; paretic, atrophied, and similar conditions, whether affecting the joints or not, we obtain almost always highly beneficial and frequently

curative results with physical manipulations, administered patiently, conscientiously, and systematically, with modern apparatus and well-understood technique. If this indisputable fact is admitted, why not try these measures in cases in which drugs fail? Greater knowledge of the technique and of the physical and physiological properties, further experience, and vast mechanical improvements gained in the last few years render cures more possible, nay, even more probable, than formerly, and enable us at present to combine medicinal and non-medicinal remedies safely, conscientiously, and with profit to the patient to an extent which in former years would have seemed absurd and inexcusable. Possibly in the near future we may be able to substitute advantageously some of the milder physical treatments for the more serious surgical ones.

As one of the most frequent and formerly the least recognized and therefore less frequently cured affections, one which is operative as the cause of loss of functional activity of muscles, ligaments, nerves, and joints, we today recognize neuritis,—especially when, as Dr. Wm. Benham Snow has so clearly demonstrated, the seat of lesion is at the point where a nerve-trunk crosses a bony prominence or fibrous structure, and, in particular, when a muscle lies over the nerve. Thus, neuritis involving the greater sciatic nerve at the greater sciatic notch, or the crural nerve where it passes beneath Poupart's ligament, may through the intense pain, etc., render a limb so useless that hip- or knee-joint disease is closely simulated. In all such cases the happiest results have been obtained by Snow and others with high candlepower radiant heat and light, followed by the Morton wave current and static sparks. The author has also had excellent results in these conditions with the 500 and 400 candle-power, 12 ampère and 9 ampère radiant heat and light lamps, applied until an intense cutaneous hyperemia is produced, followed by the high-frequency effluve from the Oudin resonator or Tesla coil applied for five to ten minutes to the painful spots, and Tesla sparks or spray to the surrounding relaxed muscles for the same length of time.

In using the Morton-wave static current, place your patient on the insulated platform, ground the negative pole by attaching it to a water- or gas-pipe, and apply the positive pole to an electrode consisting of block-tin, lead, or bottlecap composition, which is fastened and accurately fitted to the part to be treated, being held there by the patient's hand or by bandages. Start the machine with a closed spark-gap, which is gradually opened until the patient gets sufficiently strong results without experiencing any pain. Dryness of the skin at first may cause slight burning, but this soon stops, as the treatment causes perspiration, the slight sparking being thereby arrested. Give the patients about 3 treatments a week, each of twenty minutes' duration. In my high-frequency treatments I use the glass vacuum tubes for the effluve and the wood-pointed moist or metallic spray electrodes for the sparks.

In ordinary acute neuritis I never use electricity. When, however, it has been treated for over two weeks with drugs without results, I test for the reaction of degeneration, including loss of response in the muscles to faradism

and in the nerves to faradism and galvanism; if the abnormality is found present, I use the ascending galvanic current, *i.e.,* apply the positive pole to the affected and the negative pole to the indifferent point; when there is no degeneration reaction, I apply the descending galvanic current, *i.e.,* place the negative pole electrode on the affected and the positive one on the indifferent point. Generally I use about 5 to 15 milliampères for ten to fifteen minutes over the seat of pain, stabile or labile, *i.e.,* stationary or moving it up and down. The seat of pain is usually considered the affected and the point of nerve exit the indifferent point.

In those cases of neuritis, however, which, as mentioned above, simulate joint diseases, I prefer the above-mentioned combined treatment of phototherapy and high-frequency electricity, applied as already explained, and find that it usually relieves the pain. The hyperemia produced by the radiant heat and light probably assists in removing the exudation; the high-frequency current, when closely applied, is known to have an anesthetic, analgesic, myasthenic (diminishing muscular excitability), and plastic exudate-removing effect, while sparks are stimulating and germicidal.

False ankylosis, due to muscular or ligamentous contraction, probably with exudation and spasm, but not to bony union, may often be successfully treated with physical manipulations, provided these are carefully selected and judiciously applied. Galvanism over the joint, or Tyrnauer or Lentz-Frazier baking for one hour or less, radiant heat and light to remove exudation, spasm, pain, etc., together with joint movements, judicious traction, extension or flexion, as required, followed by proper manual or vibro- massage, exercises, Zander or Swedish movements, will often give surprisingly satisfactory results and possibly effect a complete cure.

In true bony ankylosis the case must, of course, be referred absolutely to the surgeon.

Tracy reports good results from hot-air baking treatments in chronic rheumatism, arthritis, osteoarthritis, acute traumatic synovitis; facial, sciatic, and lumbar neuralgia; fractures, etc.

Other very frequent causes of loss of function of joints are rheumatism and gout, both of which, as is well known, if acute, frequently yield quickly to drug medication per mouth; less so, however, when subacute or chronic. Cataphoresis may be correctly defined as medication by electricity. Whenever the active constituent of the drug used has a greater affinity for the negative than the positive pole, the drug is applied to the positive-pole electrode of a galvanic battery, which is then brought into use on the affected part; when electrolysis takes place, the liberated constituent endeavors at once to rush toward the negative pole and in doing so penetrates the tissues, exerting an immediate local effect; through absorption it has also, of course, a constitutional effect. Such drugs are electropositive. When the active ingredient, however, has an affinity for the positive pole, it is electronegative and is, of course, applied to the negative pole, the process in this case being known as anaphoresis. Both are included in the term "ionization," or ionic medication, and often give excellent results. For rheumatic joints I use potassium iodide and sodium

salicylate in cataphoresis and lithium chloride in anaphoresis. At times I combine both treatments for the same joint, placing the negative electrode with potassium iodide or sodium salicylate solution on one side of the joint and lithium chloride solution at the positive electrode on the other.

In all cases of rheumatism or gout, whether local or not, I use manual massage locally and incandescent body baths with 12 blue lights; likewise manual and vibro- massage to the abdomen, for better digestion, peristalsis, and elimination.

In unusually severe rheumatic cases involving the leg or arm I have obtained almost immediate excellent results from baking for one hour in the electric Lentz-Frazier baker at a temperature of 300° to 310° F., followed by gentle massage. Rheumatic gout has been recently treated very satisfactorily by de Kraft and myself with the high-frequency effluve and especially with d'Arsonval autocondensation. De Kraft claims that the high blood-pressure, the hot skin, the tender joints, the hard and frequent pulse are all relieved; the d'Arsonval current produces a general body warmth, perspiration, and general dilatation of the blood-vessels, thus relieving the heart, causing a greater afflux of blood to the cartilage of the joints and to the fibrous structures, facilitating phagocytosis, removing pain and stiffness, and squeezing out the urates. In all these treatments phototherapy to the joints and, later on, massage and exercise do a great deal of good.

Rheumatoid arthritis is treated like rheumatism.

Arthritis deformans, however, requires removal of its cause by tonic and reconstructive treatment, proper diet, hydriatics, radiant heat and light, baking as already explained, manual and vibro- massage, gymnastics, etc.

Sprains and dislocations may first require surgical reduction. Afterward, or at once if the injury is simply muscular, ligamentous, etc., physical manipulations give good results. If the case is very recent, a single baking sometimes acts excellently, but unfortunately most cases we see are old, neglected ones, which, of course, are obstinate, and generally not only slow, but very unsatisfactory, all the older treatments with evaporating lotions, liniments, bandaging, rubbing, etc., having been tried unsuccessfully. Even in these chronic cases repeated bakings, continued applications of radiant heat and light, carefully applied manual and vibro- massage, etc., will in a comparatively short time bring about a great improvement, and ultimately, if the patient exercises sufficient patience, will often effect a complete cure, which would have been impossible with other means.

Ununited fractures have been cured, it is claimed by certain observers, by baking. Personally, I have been lucky enough never to have a case of non-union in my practice, and therefore have had no opportunity to try this treatment; I do know, however, from personal experience that baking will quickly restore usefulness to a joint which was stiffened by the immobilization fracture treatment.

The prompt results obtained from baking in sprains are probably due to relief of muscular spasm and removal of exudation from the inflamed joints.

Synovitis of the elbow- or knee- joints, if uncomplicated, is treated with baking, with or without tapping, followed by massage and, later on, exercises. Pus requires evacuation as well as constitutional remedies. Bone, hip, sacroiliac disease and tuberculous arthritis are, of course, cases for the expert orthopedist or surgeon, and not for the physiotherapist, except possibly after operation and then only under the surgeon's orders.

Malignant disease of the joints, as elsewhere, must never be treated independently by the physiotherapist. The latter can, however, be of the greatest assistance to the surgeon after operations, or in case the patient refuses to be, or for any reason cannot be, operated upon, in which case the question of Roentgen ray, cataphoresis, anaphoresis, fulguration, or static-Oudin desiccation treatments suggests itself. Many advise X-ray treatments both before and after operations for malignant growths.

Fractures, if treated by the old immobilization method, are only too often the cause of joint disease, or at least of loss of function and utility through malposition of the bones or through ankylosis, either partial or complete and either false or true. If the partial or incomplete ankylosis leaves the limb in a bad position, it becomes necessary to break it up by forcible flexion or extension, as the case may be; this, of course, must be done by the surgeon, especially if the union is bony. If it is only ligamentous or muscular, the former can, if he desires, employ a skilled physiotherapist. Almost every fracture treated by the old immobilization method presents more or less immobility and temporary loss of function when the splints are first removed; all of this, however, usually soon disappears when properly applied physical manipulations are resorted to, especially if thermal treatment, such as baking in the electrically heated Lentz-Frazier baker, at a temperature of 300° F. or over, for one hour, is employed. Usefulness is thus restored rapidly in obstinate cases. When deformity exists, the X-ray will satisfactorily disclose mistakes in setting the bones and point out the proper method of surgical correction, though it would, of course, have proven even far more satisfactory as a preventive if it had been used for diagnostic purposes at the time of the accident, and for proper inspection of the results of the reduction immediately after.

The mobilization method of treating fractures, so extremely popular in Germany, different from the immobilization method, is alleged never to produce ankylosis and muscular atrophy, as well as to quiet pain, cause quicker absorption of the callus, hasten union, and enable the patient to resume work much sooner. The fracture is set and fixed on a splint for a few days, as in the other method. After the expiration of this short period, however, the bandages and splints are removed and massage is applied while an assistant carefully supports the limb. Effleurage, at first near and later directly to the joint, is applied, after which the splints are put on again until it is again time for massage. Soon after, these measures are supplemented by passive, and then by active, movements. Particular success is claimed by Albert Hoffa and others from massage, effleurage, and pétrissage in cases of pseudoarthrosis of the forearm and in fractures of the olecranon.

In conclusion, I must apologize for this rather rambling and incomplete paper. If it has served, however, the purpose of calling your attention to the advisability of combining scientific physiotherapy with medicinal treatment in appropriate cases, and of laying emphasis on the enormous strides which have been made in the last few years in the development of these methods of treatment and the improvement of the various forms of apparatus used, I shall feel more than satisfied.

Author's Abstract

MALIGNANT ENDOCARDITIS IN NEW YORK CITY: A CLINICAL STUDY.*

By THOMAS E. SATTERTHWAITE, M.D.,
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Among pathologists this disease is believed to be a simple endocarditis which has become infected with poisonous germs. It then assumes so grave a type that the word malignant is an apt prefix. It is so rare an affection that no one person can have had much personal experience with it, nor can anyone discuss it intelligently without having studied a large number of cases at first hand. I have had the unusual opportunity of studying 100 cases in the record books of some New York hospitals, and the chief object of this paper is to present a brief analysis of what the examination has yielded.

In this disease there is a poisoning by implantation of germs in the inflammatory deposit of the valves. The poisoned emboli, together with aggregations of bacteria, are carried forward by the blood-current into the greater circulation, infecting the entire system. The cases analyzed were sometimes examples of mixed infection. Thus, in the 100 cases, of which 33 showed specific germs in the blood or elsewhere, streptococci were found alone in 18; staphylococci occurred conjointly with these in 1; staphylococci occurred alone in 5; pneumococci were associated with them in 2; pneumococci occurred alone in 6, and the gonococcus in 1. It is clear, therefore, that the predominating germs were of the pus-producing varieties. The statistics of the 100 cases indicate that malignant endocarditis is largely a disease of early middle life, occurring with greatest frequency between the ages of 30 and 40 years, almost never under 4, and but seldom before 14 or after 60. With very rare exceptions, the disease is accompanied with fever. In these cases high temperature was the rule. In the larger number of instances it reached 104° F.; in 73 per cent. it varied between 103° and 106°; in 14 per cent. it touched or passed 106°, and in 2 per cent. it exceeded 107°. Petechiæ were noted in 19 per cent., hemorrhages in 5 per cent., and implication of the spleen in 8 per cent. Headache and diarrhea were frequent. Rheumatism was a concomitant in 37 per cent., pneumonia in 6

* Abstract of paper read at the Twelfth Annual Meeting of the American Therapeutic Society, held in Boston, Mass., May 11, 12, and 13, 1911.

per cent., tuberculosis in 5 per cent., pleurisy in 3 per cent., syphilis in 3 per cent., gonorrhea in 2 per cent., acute and subacute nephritis in 2 per cent., and cerebrospinal meningitis, mammary abscess, suppurative arthritis, colitis, chancre with suppurative buboes, chronic appendicitis, gangrene of foot, and miscarriage each in 1 per cent. The leucocyte count varied from 6650 to 36,000; it exceeded 20,000 in only five instances. Sometimes the diagnosis presents great difficulties, and has to be made by exclusion, for often the symptoms are variable and indefinite and lead to the confounding of the disease with tuberculosis, purpura, typhoid or malarial fever. It is here that a blood-culture comes to our aid, though we cannot depend absolutely on culture methods. They fail in a certain number of cases, and the germs may not be recovered during life. Inasmuch as the pathological diagnosis may be inconclusive, we must learn not to wait for it, but make independently, if we can, a clinical diagnosis. Basing our prognosis on these 100 cases, we may conclude that 85 per cent. die, that 10 per cent. improve for a time, and that 5 per cent. improve to such a degree that the result may be called recovery in so far as the malignant nature of the disease is concerned. The number of weeks spent by patients in the hospital before the fatal issue varied from one to thirteen, the majority succumbing before the end of the fifth week. Antigonococcal serum was used in 1 case, other sera in 3, and vaccines in 5; but in no instance was there recovery under these forms of treatment. In any event, the indications are for rest, good and abundant food, the liberation of pus when practicable, and the use of quinine sulphate, and perhaps iodine, internally, and supporting treatment generally.

DISCUSSION.

Dr. Stewart: One of the most important parts of Dr. Satterthwaite's paper is that in which he refers to bacterial therapy. Three factors must always be considered in relation to the use of bacterins, namely: the nature of the infecting germ or germs, the character of the bacterin or serum employed, and the amount and interspacing of doses. First, in regard to the nature of the infection. We are beginning more and more to realize that many cases of disease caused by pathogenic bacteria are mixed infections. It is not enough to say: "Use antistreptococcic serum for streptococcic infection." Other pathogenic germs may be present. In a recent case in which I advised the use of this serum because examination of the spinal fluid apparently demonstrated the cause of the meningitis present to be a streptococcic infection, the post-mortem revealed the presence of the tubercle bacillus. The patient had improved under the antistreptococcic serum, and no streptococci were found after death, but the primary infection was evidently tuberculous.

Second, the character of the serum or bacterin. In the treatment of streptococcic infections with antistreptococcic serum it is always necessary to use a polyvalent serum. The same statement applies to streptobacterin. There are many varieties or strains of streptococci, and we should use a serum or bacterin prepared from strains of streptococci identical with those causing the pathological condition. This is an argument in favor of autogenous vaccines; but the use of autogenous vaccines is not always practicable, and autogenous sera do not exist, for obvious reasons. Polyvalent, as referred to a bacterin, for example, means that the suspension contains bacteria of the same species, but from many different sources. The bacteria used for its preparation should not only all be streptococci, but be obtained from a great variety of human infections. The same principle applies to the preparation of a serum. Manifestly better results

will be secured from a polyvalent antistreptococcic serum than from one not polyvalent. In reporting the results of bacterial therapy this should be borne in mind. Mixed bacterins should be employed in mixed infections, unless an autogenous vaccine is used. A mixed bacterin is one which contains the various bacterial species generally present in a mixed infection. A mixed gonorrheal infection may show the presence of no less than seven kinds of bacteria.

Third, in regard to the amount and interspacing of doses. Dr. Barton Cook Hirst, who has had much experience in the use of a certain brand of antistreptococcic serum, tells me that it is essential to give at least 100 c.c. of it during twenty-four hours in order to obtain the brilliant results frequently secured with it in his service at the hospital of the University of Pennsylvania. I used the expression "a certain brand" because he also called my attention to the great discrepancy observed in reports of results obtained in the use of different brands of serum. This illustrates why there should be common standards for sera and bacterins. Clinical control for the guidance of dosage is more practical than the opsonic index, and this can be learned only by experience. The amount of bacterin to be given as an initial dose is not as important as it is to learn to tell how much to give altogether and how frequently to repeat the dose.

Finally, I desire to express the satisfaction I have derived from Dr. Satterthwaite's admirable paper, as it shows that he appreciates the necessity of standardizing materia medica products if they are to be made in fact instruments of precision. And I hope the time may speedily come when the American Therapeutic Society may work in co-operation with the American Pharmaceutical Association in fixing standards for the nomenclature, character, quality, and strength of the new materia medica products constantly presented to the profession.

Editorial

INDEPENDENCE-DAY INJURIES.

In an editorial published in these columns in the issue of May, 1911, reference was made to the fact that the total number of deaths resulting from Fourth of July activities in 1910 had been 131,—less than in any one of the eight preceding years,—while the number of cases of tetanus was 72. In 1911, as the result of the campaign waged for a "Sane Fourth" by the American Medical Association and the efforts made in various localities to reduce the number of casualties, the total number of deaths was 57, while the cases of tetanus numbered 18, of which only 10, or 55 per cent., proved fatal, whereas 93 per cent. had resulted fatally in 1910. As before, the blank cartridge was responsible for most of the cases of tetanus.

While these results, from the standpoint of the country at large, and with regard to the more serious forms of accidents, are highly gratifying, and show conclusively that the efforts made were well planned, it is to be particularly noticed that it is in our own State of Pennsylvania that the greatest amount of work in the July Fourth campaign still remains to be done. From the latest report of the Committee on Independence-day Injuries of the State Medical Society of Pennsylvania we learn that, although the number of deaths in this State was reduced to 1,—which occurred in Pittsburgh,—and that there was

but 1 case of tetanus—which recovered—directly traceable to the use of fireworks, the number of non-fatal injuries was far greater in Pennsylvania than in any other State. Of the total number of injuries throughout the nation, 1603, Pennsylvania furnished over one-fourth, 442. This State and Illinois each had 6 cases of tetanus due to causes other than fireworks, such as penetrating wounds, splinters, crushing injuries, etc., showing a general reign of disorder and violence; no other State had more than 2. Of such injuries as resulted in total or partial loss of sight, loss of legs, arms, hands, or fingers, Pennsylvania had 37, or 18 more than New York and 20 more than Illinois. Philadelphia stands first—or, rather, last—among the large cities in non-fatal injuries of all kinds, having had 294 injuries, as compared to 91 in New York City, 53 in Chicago, and 3 in Boston.

It is thus rendered only too plain that, although probably in no other State in the Union have more numerous and determined separate efforts been made to shorten the casualty list than in Pennsylvania, further preventive measures are required before the results can be considered satisfactory. The most promising steps to be taken would seem to be the restriction by law of the size of firecrackers manufactured and sold (an act to this effect has already been passed in the Legislature), strict repression of hoodlumism and senseless, dangerous pranks of all sorts on Independence Day, and, especially, the employment of "substitution methods," *i.e.*, provision in every community for extensive celebrations in the form of parades, addresses, band music, properly regulated evening fireworks, etc., which will tend to divert the public attention, including, above all, that of the small boy or youth, from the more dangerous features of the occasion. The physician himself can still do much toward prevention by warning the families under his care of the perils to which their younger members are exposed on July Fourth.

Cyclopedia of Current Literature

ASCITES, CAUSES OF.

Tabulating from the autopsy records of the Massachusetts General Hospital the actual causes of ascites as found *post mortem* in 2217 autopsies, the author found that, as had been expected, the five following varieties of disorder were among those responsible for the greatest number of cases, viz., cardiac weakness, nephritis, abdominal neoplasms, cirrhotic liver, and tuberculous peritonitis. In regard to the conditions less frequently giving rise to ascites, however, certain more or less surprising facts came to light in the author's research. Thus, of 391 cases operated upon for multilocular ovarian cyst, in 31, or 7.9 per cent., ascites was well marked at the time of operation. Of 48 cases of cancer of the ovary, 40 per cent. showed a considerable amount of ascites at operation. Of 723 cases operated for fibroid of the uterus, 55, or 7 per cent., had ascites. The author concludes as follows:—

Among the possible causes of extensive ascites we must not lose sight of the small solid tumors of the ovary.

Pleural effusion may be produced by an extensive ascitic accumulation. This association may lead to a false diagnosis of pleural and peritoneal tuberculosis.

The cure of both pleural and peritoneal effusions may result from excising a benign ovarian tumor.

Among all causes of ascites, tuberculous peritonitis may sometimes be recognized by the greater slowness of its accumulation of fluid.

Intestinal obstruction ranks fifth and disease of the female genitals sixth among the causes of ascites, being surpassed only by cardiac disease, nephritis, cirrhosis, and tuberculous peritonitis.

Besides these causes, abdominal neoplasms and adherent pericardium are the only factors of importance in the production of ascites. R. C. Cabot (American Journal of the Medical Sciences, January, 1912).

COLDS, VACCINE TREATMENT OF.

During three years the author has made extensive use of stock vaccines in the routine treatment of colds. The clinical symptoms were usually depended upon in making a diagnosis for the first inoculation. At first the diagnosis had been regularly verified by bacterial examination, both from slides and culture growths, but pneumococci and streptococci, and more often both organisms, were found to be for all practical purposes such constant factors that during the last year bacterial examinations were not often made, but mixed stock vaccines used empirically. Experience leads the author to believe that in acute colds, if the case is immunized against the pneumococci and streptococci, infections caused by the other organisms often found in these cases are of secondary importance.

In a general way, from the clinical symptoms, the author distinguishes two classes of cases suffering from colds, viz., those having acute attacks that clear up during the intervals and those in which the condition has a tendency to linger on between the attacks. The former are due more particularly to the two organisms already mentioned, while the latter, in addition, are usually complicated with *Micrococcus catarrhalis* or the mucosis group of organisms. In the treatment of these cases the author uses a mixed stock vaccine composed of various strains for each organism in the vaccine; for the former class of cases pneumococcus 40,000,000, streptococcus 30,000,000, and staphylococcus 150,000,000, and in the latter pneumococcus 40,000,000, streptococcus 30,000,000, and *M. catarrhalis* 100,000,000.

Usually there is marked improvement from twelve to twenty-four hours after the first inoculation, all the acute symptoms often subsiding. On the second day another dose should be given, or the case may relapse, and after that inoculations should be made at from three- to six- day intervals until all symptoms have subsided. Cases complicated with the *M. catarrhalis* usually require treatment for a longer time than the other class. In some cases it is necessary to double the dose. If prompt improvement does not follow the routine treatment, careful bacterial examinations of the sputum should be made to determine what additional organism may be responsible.

The method has proved so satisfactory in the author's hands that he believes that were it generally adopted practically all the severe complications following colds—pneumonia, arthritis, mastoiditis, endocarditis, and many other ailments—would be eliminated.

The harmlessness of the vaccines is especially emphasized.

In chronic catarrh similar vaccines are used. Treatment is started with an average dose and gradually doubled. Inoculations are made at four- to seven-day intervals and continued for several months. A characteristic feature of the vaccine treatment in subacute and chronic infections of the respiratory tract is the marked general improvement that is noticed before the local infection shows much change.

In hay fever the author has used staphylococcus, pneumococcus, and streptococcus combination vaccine during three summers, giving inoculations at from three- to five- day intervals, with marked beneficial results. Some patients were cured after 3 or 4 inoculations, while others ran a mild course. G. H. Sherman (New York Medical Journal, March 2, 1912).

EPILEPSY, MEDICAL TREATMENT OF.

The medical treatment of epilepsy is divided by the author into a general, or physiological, treatment and a treatment based on drugs.

The former includes: (1) Treatment directed toward the elimination of waste and toxic substances. The bowels should be opened once or twice daily, the kidneys kept active by free ingestion of water, and the skin likewise by tepid sponge bathing or by brief immersion baths followed by a gentle rubbing. (2) Mild exercise, the patient spending as much time as possible in the open air. It is also necessary that he should sleep in a well-ventilated room. (3) The diet should be a mixed one. The author is not in favor of a too strict and rigid diet. It should contain vegetables and milk in liberal amount, and also the white meats. The red meats should be given sparingly; some patients will improve with the absolute withdrawal of the meat. The quantity of starchy food used should be moderate; starches are muscle foods, and, since the epileptic is not to exercise strenuously, the amount of starches indicated is not large; further, large amounts favor digestive disturbances. As regards fats, a normal amount may be given; as a rule, the patient's own inclination can be trusted in this respect. Digestive difficulties should be corrected. (4) Both physical and mental health should be maintained as near the physiological level as possible.

As regards drug treatment, the author states that, in his estimation, to decry the usefulness of bromides in epilepsy is to deny the cumulative experience of almost sixty years. He has made use for some years of sodium chloride withdrawal as a measure auxiliary to bromide treatment, and shares the opinion of others as to its value. The patient, as a rule, becomes rapidly accustomed to the absence of the salt. After a time, however, some patients begin to crave it; if so, it may for a short time be permitted, but later again withdrawn. If the prohibition of salt be too radical, there may result a marked loss of appetite and corresponding loss of weight; as elsewhere, a middle course yields in the long run the best results.

It is very important to use bromides early in the disease and in sufficient dose to control the seizures. Early in a case attacks can be more readily suppressed and controlled than later, and it should be the aim thus to prevent if possible the establishment of the "convulsive habit." Bromides should, in addition, be given for a prolonged time; gradually, especially where the physiological treatment is carried out, the dose may be diminished or even suspended for a period.

In the author's experience, combination of sodium glycerophosphate with bromides has proven beneficial. There is an increased waste of phosphorus in epileptics, and some such procedure would seem indicated. The Flechsig method of treatment, consisting in administration of opium in increasing doses at intervals during the day for five or six weeks, after which the opium is suddenly withdrawn and bromide given in full doses, proves efficient for a time in some cases where bromides fail. Thyroid extract appears to have a real, though limited value. It is in epileptic children with rather marked stigmata of arrest, with signs pointing to possible thyroid deficiency, that it seems useful, though it is occasionally valuable in cases in which these stigmata are not pronounced. The author thinks it extremely probable that its usefulness is to be ascribed to an increased oxidation of the tissues and a consequent destruction of toxic materials. It should be given in small doses over long periods of time. Benefit cannot be looked for save after prolonged use. The seizures should meanwhile be controlled by bromides; sooner or later it will be found that the dose of the latter can be greatly diminished and even for a time suspended.

The author recently had skiagraphed a number of epileptics, with interesting results in regard to the size and shape of the sella turcica. In several the sella was shown to be greatly enlarged, leaving no doubt as to an increase in the size of the pituitary body; others again revealed marked variations in size and conformation which appeared to be in excess of the variations found in normal individuals. These observations would justify the trial of pituitrin.

A plea is made by the author for the recognition of the aura, to permit of the use of various mechanical or physiological expedients for forestalling impending attacks, as well as the administration of amyl nitrite. The preliminary symptoms of headache, depression, or other vague disagreeable sensations sometimes experienced by epileptics for several hours or a day before a seizure should suggest the use of a saline purge, perhaps a diminution of the food, or a more active administration of the bromide. F. X. Dercum (Therapeutic Gazette, March, 1912).

EPILEPSY, SURGICAL TREATMENT OF.

Of 53 operations upon epileptic subjects performed by the author, in only 6 were the findings negative, and in the remaining cases the following conditions were noted: Cysts (8), adhesions (6), pachymeningitis with adhesions, edema, or cysts (13), edema alone (11), with cyst (1), thickened dura (2), organized blood-clot (1), cystic degeneration (2), cortical gliosis (2). No case should be reported as cured by operation, in the author's estimation, until at least three years have elapsed, since otherwise the well-known effect resulting merely from operation *per se* in epileptic subjects cannot well be differentiated from the benefit produced by removal of the intracranial lesion. Out of 25 cases of the author which had passed the three-year limit and could be traced, 7, or 28 per cent., were profoundly influenced by the operation. One of these was a case of Jacksonian epilepsy of five months' duration in which a subcortical cyst was found at the operation and the cyst-wall removed. He recovered considerable strength in the arm and leg, which were partially paralyzed: the headaches were entirely relieved, and the attacks were reduced in frequency to one every two months and became much less severe.

In most of the other patients the attacks disappeared entirely after operation.

In concluding, the author states that operation is justifiable: (*a*) In traumatic epilepsy with external evidence of an injury; (*b*) in traumatic epilepsy without external evidence of an injury when the nature of the attacks or the symptoms immediately following the injury indicate the seat of the lesion; (*c*) in all forms of Jacksonian epilepsy; (*d*) in general epilepsy where the suggestion of a focal lesion may be found by a careful physical examination before or after the attacks in some disturbance of motion, sensation, or reflexes. The operative procedure must be adapted to the character of the lesion. Cranial defects should be repaired; focal lesions, such as cysts, tumors, etc., should be removed; edema, a very common lesion, calls for some method of drainage; in Jacksonian cases without lesion the cortical center should be excised; in idiopathic epilepsy without focal symptoms or lesions Kocher's decompression deserves consideration. The value of the operation may be measured in terms of improvement or cure. Either should be considered as justifying the operation. Gratifying results may be anticipated in at least 10 to 25 per cent. of cases. C. H. Frazier (Therapeutic Gazette, March, 1912).

FIXATION OF KIDNEY, NEW OPERATION FOR.

The author, after trying other methods of kidney fixation without uniform success, has adopted the following procedure: An incision 3 inches long is made 2 inches external to the spinous processes of the lumbar vertebræ, vertically downward from the lower border of the twelfth rib, through the skin and fascia; the outer fibers of the erector spinæ are separated and the quadratus lumborum incised, exposing the posterior layer of the transversalis fascia. This is incised about 1 inch from its spinous attachment, after which the kidney is enucleated and the perirenal fat excised posteriorly, internally, and externally, but not inferiorly. Two sutures are placed at either pole of the kidney at the inner and outer borders, the needle being left on each.

Two parallel incisions, 1½ inches in length and 1 inch apart, are now made longitudinally through the kidney capsule and the intervening capsule elevated from the cortex by blunt dissection. The kidney is then returned to its fossa, and a strip of the transversalis fascia corresponding in width to the length of the elevated portion of the capsule cut and passed beneath the latter. The transversalis fascial strip is sutured with chromicized catgut to the corresponding portion of the spinal attachment of the fascia.

Thus suspended by a strap of fascia, the kidney is further reinforced by passing the sutures previously inserted in its poles (Brödel's sutures) through the quadratus lumborum muscle in the usual manner and tying them over the muscle. The wound is then closed, and the patient kept in bed three weeks, until adhesions have formed between the fascia and the capsule and cortex of the kidney.

This operation utilizes the old method of suspension to hold the kidney in place temporarily while healing takes place, and at the same time places the organ in a suspensory ligament from which it is almost impossible for it to escape. F. McKelvey Bell (New York Medical Journal, January 20, 1912).

HYOSCINE-MORPHINE ANESTHESIA IN GENERAL PRACTICE.

After using a combination of these drugs in 50 labor cases the author is of the opinion that in it we have a great help to the soothing of parturient women. There is no danger in giving a single dose of $\frac{1}{100}$ grain of hyoscine hydrobromide and $\frac{1}{4}$ grain of morphine sulphate, though if it so happens that the beneficial effect does not arrive with the first injection one should on no account be tempted to repeat the dose, as such would in all probability be useless so far as the relief of pain is concerned, and would, on the other hand, have all the elements of disaster in it. Frequently the patient's friends are slightly distressed at the talkativeness of the patient —it is rather a muttering delirium— but if they have been forewarned of this there is no worry to the practitioner. In the majority of cases, after the injection, the room being darkened and absolute quiet insisted on, the patient falls into a restless sleep, suffering no discomfort and only turning around uneasily in bed when a pain comes on, to fall asleep again when it passes off. Usually this condition lasts throughout labor, and the child is born with little knowledge on the part of the mother. Some women, however, seem to react negatively to the drug, their pains being aggravated after the injection, while others are uninfluenced. Those cases which are most likely to give a negative result are the very ones one would wish to be positive, viz., the highly neurotic.

If the drug be given at the most favorable time—when the os is about the size of a silver dollar—there does not seem to be much effect on the course of labor. The pains come a little slower, but when they do come have greater power.

As regards the effect on the child, there is in many cases a cyanosed appearance and absolute disappearance of all reflexes, though the breathing is regular, and the heart-sounds steady and regular, though weak. Artificial respiration is quite without effect, and no effort to stimulate the child to take fluid gives any response. But after a period varying from one to two hours the child, as a rule, is quite well, and there is no trouble thereafter. Arthur Innes (Practitioner, February, 1912).

MUCOUS COLITIS AND SPASTIC CONSTIPATION.

Discussing the diagnosis and treatment of these associated conditions, the author states that it is generally easy to examine the colon from the cecum to the hepatic angle, as well as the descending colon. The transverse colon can only be defined when it is either contracted or filled with feces. In examining for it two methods are useful: (1) that of Glénard, which consists in carefully placing the soft part of the four fingers of both hands midway between the umbilicus and ensiform cartilage and pressing them downward toward the umbilicus, when the contracted colon can be felt to give the sensation of a tense cord; (2) grasping the trunk with the two hands and palpating with the thumbs, to ascertain whether there are retained feces. The pelvic colon can only be satisfactorily examined per rectum or bimanually. A useful test for coprostasis is to give a large quantity of charcoal before a meal. Normally it will be discharged in twenty-four hours. In some cases it will be from forty-eight hours to several days before it appears, even though there is a satisfactory daily action; on the other hand, it may not cease to blacken the feces for several

days. If enough charcoal be given, a means is thus afforded of ascertaining whether there is merely delay in the bowel function or whether there are probably pouches over which the main current passes.

In the treatment, whenever there is either weakness or want of tone of the abdominal muscles, even without visceroptosis, it is necessary to prescribe an elastic belt, supporting the abdomen immediately above the pubes; this should be combined with exercises. A belt is especially necessary in the obese. When systematic dieting is being carried out nothing but a thorough daily evacuation is of any use; to know whether it is complete the charcoal test or an examination of the product of a water enema may be employed, and further information is obtainable by urinary analysis.

Where the feces are too dry, salines, with or without agar-agar or regulin, give the best results. The author has repeatedly verified Glénard's observation that a saline draught in cases of insomnia during the early morning hours will often bring on sleep. Where energetic means are used to cause evacuation of irritating and spasm-producing materials—inspissated mucus, membranes, sandy material, etc.—in mucous colitis, the slow and painful passage of these substances will give trouble for four or five days. Oxgall pills should always be given when there is pain, as they help dissolve adherent, coagulated mucus. Oil enemata are indispensable, facilitating progress of the material in the bowel.

Cellulose in the diet, when it does not cause even greater discomfort from flatus, undoubtedly helps to prevent accumulations, but discretion is required in its use. Agar-agar should always be tried in these circumstances, but only so long as it is looked on as a material which may usefully replace vegetable fiber. Hubert Higgins (Practitioner, February, 1912).

PELLAGRA, PROGNOSIS OF.

Of cases of pellagra seen by the author in New Orleans in 1909 over 50 per cent. died during the year. Of 96 cases seen in 1911, only 4 died. This changed condition, though partly due to the milder type of disease prevailing around the city mentioned, is due chiefly, according to the author, to the fact that mild cases are now recognized, whereas formerly only the severe and frequently hopeless cases were identified.

The severity of the symptoms present at the time of examination in a given case is considered by the author a valuable guide to the prognosis. Mild and moderate symptoms after an attack has existed for at least two or three weeks indicate that the chances of recovery from the attack are good. Whenever an attack is certainly improving or is mild, or during the interval between attacks, the likelihood of recurrence depends largely upon the patient's ability to avoid the chief causes of the attacks, such as corn food, sunlight, hot seasons, indigestible food, etc. As to the length of time a patient must be free from attacks before he is safe from a return, the author's observation leads him to the conclusion that if an attack can be avoided for twelve months or longer there is little danger of a return, provided all corn food has been avoided during the time, and that it is never resumed.

Another guide to prognosis is the condition of the reflexes. Whenever the knee-jerks are exaggerated, as they are in all moderate and early cases, indicating irritation of nerve-tissue, recovery is possible. But when they are absent (barring

other causes) the case is beyond hope; the author saw but one such patient improve, and it was not known whether he had ever had normal knee-jerks.

The so-called typhoid pellagra case seldom, but occasionally, gets well. Pellagrous insanity is unfavorable, but does not bar recovery. Deep, moist lesions are unfavorable. Severe stomatitis, indigestion, or diarrhea may produce death by starvation. Associated diseases render the prognosis of pellagra less favorable, according to that of the particular disease associated.

In Italy and Roumania, where the profession has long been familiar with pellagra, the mortality is considerably less than 10 per cent. As in tuberculosis and many diseases, much depends upon early diagnosis. C. C. Bass (Southern Medical Journal, March, 1912).

PNEUMONIA, UTILITY OF EPINEPHRIN IN.

As a result of the study of cases of lobar pneumonia accompanied by cardiovascular failure and pulmonary edema in which epinephrin was used, the author is convinced that a definite clinical picture can be established the presence of which will immediately suggest the administration of epinephrin, while the absence of this picture will contraindicate its use. He separates these cases into 3 groups: I. Cardiovascular failure and pulmonary edema resulting from toxic paralysis of the cardiac centers. This group is small in number. Death usually occurs suddenly and without warning, the heart refusing to respond to any form of treatment or stimulation. II. Acute dilatation of the heart due to toxic degeneration of the muscle or added to the myocardial degeneration of people advanced in years. This condition is accompanied by an elevation of blood-pressure usually ranging from 125 to 170 mm. Hg. Cyanosis is a marked symptom from the start. The superficial vessels are contracted, and the hands and feet cold. The first heart-sound loses its muscular quality. The pulse is rather small, of high tension, and irregular both in frequency and size, the irregularity in size being very important as showing an incomplete systole. These symptoms are present until relieved by crisis, but they may be replaced at any time by a sudden attack of dyspnea, increase in the cyanosis, and a pulse increasing in rate, but retaining its previous characteristics. Physical examination reveals enlargement of the heart, with descent of apex, etc. Epinephrin if used in these cases will intensify the dilatation by raising the pressure, as illustrated in a case reported by the author, and is, therefore, contraindicated. III. Vasomotor paresis,—a condition due to toxemia which affects excessively the control of the caliber of the arteries. In the average case of pneumonia, the pulse is soft and compressible and on the third or fourth day may even be dicrotic. Cyanosis is not a prominent feature, and the extremities are warm. But the blood-pressure should be carefully watched, as an impending loss of vascular control will be anticipated by a fall in the pressure from the usual 95 or 110 and an increase in the pulse rate from 96 or 110 to 120 or 140. This tendency to increase may not be constant during the twenty-four hours, but is sufficiently prominent on the chart to be detected, and is confirmed by the compressible pulse and warm extremities. Such a state may exist several days with subsequent recovery; but not infrequently about the fifth or sixth day there occurs a sudden acceleration of the pulse, dyspnea, cyanosis, a drop in the pressure to 70 or 80

mm., pulmonary edema, and death before the racing heart can be controlled. These symptoms the author has observed not only during the activity of the disease, but also at the time of crisis and during the lysis accompanying delayed resolution. The heart is rapid, but does not show the signs of dilatation. In this third class of cases, with blood-pressure below 110 and the other symptoms of vasodilatation, the author advises the use of 10-minim (0.6 c.c.) doses of epinephrin intramuscularly, even before any signs of pulmonary edema appear. If edema develops suddenly the drug should be used in 15-minim (1 c.c.) doses every twenty minutes for a series of 4 to 6 doses or until the symptoms are controlled, the series to be repeated if there are any signs later of a return of the condition. This edema must, however, be differentiated from that accompanying acute dilatation of the heart, in which epinephrin, by raising the blood-pressure, will accentuate the dilatation; the differentiation is made by means of the accompanying symptoms already referred to.

Illustrative case histories are adduced by the author in support of his recommendations. In order to ascertain the durability of the effects of epinephrin in pneumonia he selected patients between the ages of 20 and 50 whose arteries were not hardened and administered 15 minims every twenty minutes for 4 doses, the pressure being taken every hour thereafter. The pressure was found to be maintained above the initial level for about four hours, the rise being noticeable about fifteen minutes after the first injection and reaching the maximum in one and three-quarter to two hours from the time of the first injection. By subsequent series of injections in the same patients the results were reproduced. S. A. Brown (American Medicine, November, 1911).

RAYNAUD'S DISEASE, TREATMENT OF.

The author looks upon every case in which the patient complains of sharp pains, coldness of the toes, and where they are pinkish in color, with a dry, shiny skin, as a probable case of Raynaud's disease. If there is gangrene a local amputation of the affected member may be all that is necessary, but healing of the wound-surfaces is exceedingly tedious; in one case it did not take place until two years after operation. Some cases have shown traces of sugar in the urine, but the writer does not consider this a diagnostic point.

For local application, the author has found that liquid ichthyol in 10 per cent. strength gives most relief. Internally large doses of potassium iodide are very beneficial, and if the patient can rest in bed and make hot applications of some antiseptic solution to his feet he is doing all that is possible. About 20 per cent. of the cases can be kept comfortable under these measures; at least the progress of the disease can be arrested. E. C. Beck (Interstate Medical Journal, April, 1912).

SYPHILIS, TREATMENT OF.

The author advises 0.4 or 0.5 Gm. for adults (0.3 or 0.4 Gm. as the initial dose) of Ehrlich's remedy in the treatment of syphilis of the nervous or cardiovascular systems or of the viscera. In cases of advanced syphilis where salvarsan is contraindicated, brilliant results were secured by the administration of 0.4 Gm. of salvarsan, made into a sterile oil emulsion, half of which was injected into each gluteal muscle. The intravenous method is strongly urged by the author, who dwells particularly upon

cases of advanced syphilis of the nervous, cardiovascular, and visceral types, in some of which he has observed marked improvement. Many paretics were unimproved, but 2 cases are reported in which the remedy was of distinct benefit. The author likewise reports 2 cases of tabes dorsalis, under treatment for more than a year, in which the lancinating pains were controlled, muscular incoordination improved, and the Wassermann reaction became negative. A similar brilliant result was obtained in a case of advanced cardiovascular syphilis, in association with a greatly enlarged liver and glycosuria, under treatment for nine months. While the Wassermann reaction was but slightly influenced, the glycosuria disappeared and did not reappear, even though sugars and starches were given freely; the liver returned almost to normal size, and the circulation was greatly improved. Judson Daland (Pennsylvania Medical Journal, April, 1912).

TONSIL REMOVAL UNDER QUININE ANESTHESIA.

A few years ago all tonsils were removed under ether or chloroform anesthesia, and in children under 10 years of age the author believes ether should be given in preference to any other anesthetic. Following the introduction of cocaine and adrenalin many men injected these solutions into the tissues surrounding the tonsil, but the large number of deaths reported have caused a number to discontinue the use of the cocaine and adrenalin mixture. In all cases in which local anesthesia is desired the application of cocaine should be limited to the surface, in the author's opinion, and the drug should not be injected into the tissues surrounding the tonsils. Quinine solutions in connection with urea have been tried, but the anesthetic effect was not uniform, and there was considerable sloughing and postoperative pain.

The author now uses a 5 per cent. solution of quinine bisulphate, and, while there has apparently been an increase of hemorrhage over cases in which it was not used, he is able to report complete absence of pain in all cases in which the solution was deposited outside the capsule of the tonsil and into the cellular tissue forming its bed. By means of an ordinary 1-ounce piston syringe to which a long, curved needle is attached, he introduces about ½ dram of solution inside the border of the anterior pillar and the same amount at a point opposite between the capsule and the posterior pillar. The enucleation may begin as soon as the solution is injected.

There is no necessity to prepare the patient as for an ether operation. In the author's opinion, the patient can stand the shock of the operation much better if it is done following a meat meal—particularly if the operation be done under cocaine. If the patient is oversensitive, however, in and around the fauces, it may be advisable to operate on an empty stomach rather than have the stomach contents ejected during the operation. Adult patients should be seated in a rhinological chair so that the head will be properly supported. As a rule, the tongue will keep out of the way after the tenaculum is applied to the tonsil.

The author describes in detail the operative technique. After the first incision in the mucous membrane has been made he uses a blunt-pointed tonsil knife for further dissection. The statement often made that there is not as much hemorrhage after tonsillectomy as after tonsillotomy does not agree with the author's experience. He urges that all tonsillec-

tomies be done in a hospital with proper assistance. C. L. McDonald (Medical Record, October 21, 1911).

TYPHOID FEVER, NEW TEST FOR.

The test consists in injecting with a fine hypodermic needle a few drops of a suspension of dead typhoid bacilli of the strength of less than 5 million to the cubic centimeter. This strength is readily made by taking 1 drop of the 1000 million vaccine now on the market, adding it to 20 drops of sterile saline solution, and mixing thoroughly. In twenty-four hours after the injection, which should be made intradermally and as superficially as possible, the *non-typhoid* patient shows an area of well-marked redness, while the typhoid patient shows absolutely no reaction. The redness in the cases that react disappears forty-eight hours after the injection; any subsequent redness is considered an infection, and the test should be repeated.

The test gives no constitutional reaction and has no elements of danger. Slight soreness and itching may appear in the cases which react, but quickly subside.

In 12 cases of typhoid tested the reaction was absent except in one instance in which there was slight redness and the Widal test also proved negative. Of 15 controls, all gave a reaction but 3; in 2 of the latter the Widal was likewise, for some reason, positive.

The advantages claimed for this test by the author are: 1. No danger from live culture, such as exists with the Widal test. 2. No microscope or blood of patient required. 3. Appears early, in 1 case three days before the Widal. 4. No delay waiting for laboratory report. F. A. Prendergast (Medical Record, December 30, 1911).

ULCERS, TREATMENT OF VARICOSE.

The value of complete removal of dead tissue by a process which he designates as the "scrubbing" of sluggish chronic ulcerations, especially varicose, is dwelt on by the author. Thorough cleansing of the involved area, carried out with the patient under deep general anesthesia, has proven effective, in his hands, in healing ulcers resistant to the other forms of treatment. The patient having been rendered insensitive, all crusts surrounding the ulcer or on any other portion of the leg are removed. Tincture of green soap and sterile water are poured on the ulcer, and scrubbing begun with an ordinary stiff brush, previously thoroughly sterilized. At first diseased and spongy blackish tissue comes off. Clean water is used to wash off the débris, and scrubbing continued until the base of the ulcer is smooth and the edges stand out clearly, red and hard, giving the whole a "punched out" appearance. There is some bleeding, but this seems conducive to quick healing. Strenuous scrubbing of the edges is necessary; the resulting hyperemia shows its beneficial results within twenty-four hours, when a little blue line of infant granulations appears. Before applying a wet boric or bichloride dressing, the author paints the ulcer and its immediate vicinity with tincture of iodine to prevent reinfection as much as possible. As a rule, upon regaining consciousness the patient complains of extreme pain, and if it is thought advisable some form of hypnotic may be given; but if the bandage is kept moist with warm solution, the pain and burning soon cease. Granulation sets in at many different places, and repair is so rapid and satisfactory that the author believes this to be the ideal method of treatment for varicose ulcers of the leg. The difficulty lies in the unwillingness of

the average patient to be operated upon merely for an ulcer.

The last case thus treated by the author was a woman 61 years of age who had an ulcer of sixteen months' duration above the ankle-joint. After a thorough scrubbing of the ulcer and four days' rest in bed, the ulcer healed over completely with a thick, smooth scar in three weeks. E. C. Beck (Medical Record, December 30, 1911).

VERTIGO, AURAL.

The fact is emphasized by the author that, in the very large proportion of cases of vertigo where specific disease or neoplasm at the base of the brain can be excluded, the symptom is in most instances due to some underlying disease of the middle ear or labyrinth. There are many patients suffering from chronic nephritis, chronic cardiac disease, arteriosclerosis, or intestinal toxemia who do not have attacks of vertigo. In these cases examination will ordinarily reveal both the middle and internal ear to be in an abnormal condition. Given some slight abnormality in either the conducting or perceptive auditory mechanism, and the diseases mentioned may produce vertigo so severe as to overshadow all the other symptoms of which the patient complains.

In treating cases of this type, therefore, both factors must be considered. The author reports cases in which general medication was without avail until the aural lesion was recognized and treated. Some of these patients, in whom an aural lesion is combined with high arterial tension, may be kept fairly comfortable by medication directed to the arteriosclerosis. But often such medication fails to relieve unless the aural condition is also treated.

Those cases due to a suppurative inflammation of the labyrinth itself or to perilabyrinthine inflammation fall entirely within the domain of the otologist. Ordinarily, in these, the aural lesion is so marked as to be recognizable at once; but the clinician should remember that in any case attended with aural suppuration the appearance of vertigo is a symptom of grave importance, which may demand immediate surgical interference.

In cases of labyrinthine inflammation, either primary, or secondary to chronic non-suppurative disease of the middle ear, relief is often obtained by the internal use of pilocarpine in small doses, the dose being gradually increased up to a mild physiological effect. Labyrinthine pressure is thus reduced, the vertiginous attacks ceasing in consequence. Babinski advised lumbar puncture in intractable cases of vertigo with aural symptoms, but, though successes obtained in this way have recently been reported, the author condemns the procedure as being not entirely devoid of risk.

Certain cases of vertigo depend upon refractive errors, are discovered by the ophthalmologist, and are relieved by appropriate treatment, but in these cases the ocular symptoms are ordinarily so pronounced as to attract the attention of the general practitioner. E. B. Dench (New York Medical Journal, January 6, 1912).

Clinical Summary

Practical hints from articles and abstracts that have appeared in the Monthly Cyclopedia and Medical Bulletin during the current year.

Acne. TREATMENT. Vaccines useful for selected cases: (1) Cases with deep-seated pustules, occupying a large area; microorganisms abundant, staphylococcus greatly predominating. Autogenous staphylococcic vaccine most efficient, but must be administered over some months. (2) Cases with lesions indolent and superficial, chiefly inflamed comedones, with but little pustulation. Stock acne bacillus vaccine here gives good results in many instances. Administer 5 to 10 millions acne bacilli every week or ten days. (3) Cases combining the more and less severe lesions of the first and second groups. Use mixed vaccines of staphylococcus and acne bacillus. Other measures: Remove other etiological factors, such as reflex circulatory disturbance due to nervous strain in adolescence and digestive disorders. Correct constipation and regulate diet and mode of life. Locally, squeeze out comedones and wash often and vigorously with soap and water; if suppuration present, puncture or incise pustules, bathe with hot water, and dress antiseptically; disinfect skin and have garment worn next to affected part frequently changed; X-rays; radium for indurated nodules. *Morris and Dore.* Page 93

Acne Rosacea. TREATMENT. Where acne indurata associated, incise papules and pustules, scarify distended nasal capillaries, and apply Bier's cup for some time to individual lesions. Have patient apply hot compresses freely to face and at night following ointment: Salicylic acid, 0.6 (gr. x); precipitated sulphur, 4.0 (3j); white petrolatum, 30.0 (3j). *Aronstam.* 176

Adenitis, Tuberculous. TREATMENT. Röntgen rays recommended for routine use in cases that do not readily respond to medical treatment. Give ten daily irradiations, then 2 or 3 times a week. Study of proper dosage in each case necessary. Patients thus treated early can be cured without breaking down of a single gland. Where such breaking down does occur, incise, swab out cavity with equal parts of iodine and phenol, and drain. *Boggs.* 229

Anemia, Pernicious. TREATMENT. Case in a pregnant woman at term in which 4 intragluteal injections of defibrinated human blood, amounting altogether to 159 c.c., proved markedly beneficial. *Esch.* 44

Anorexia. TREATMENT. Fresh pineapple juice found useful to relieve anorexia in 150 cases, including patients with simple anemia and pulmonary tuberculosis and convalescents from malaria, nephritis, pneumonia, typhoid fever, hepatic colic, acute cholecystitis, etc. In chronic gastric diseases in general, especially alcoholic cases, considerable benefit likewise resulted. *Floersheim.* 233

Appendicitis, Chronic. DIAGNOSIS. Pain chiefly in right lower quadrant, if unassociated with attacks of epigastric pain and nausea, is seldom due to appendix; before diagnosing chronic appendicitis exclude every other possible condition.

TREATMENT. Appendectomy alone frequently does not cure. This is true especially of patients with chronic constipation; a long, dilated cecum, with other evidences of enteroptosis, is usually present. *Stanton.* 33

Arthritis, Gonorrheal. TREATMENT. Intra-articular injections of iodine tincture, 5 Gm. on the average, used in many cases of various types, with considerable success. Increased swelling at first, then cessation of joint effusion, disappearance of pain, and return of motion. *Hildebrand.* 37

Arthritis, Rheumatoid. TREATMENT. 1. Liberal diet, including plenty of animal food. 2. Guaiacol carbonate in cachets; dose at first from 5 to 10 grains *t. i. d.*, to be increased by 1 to 2 grains each week up to 15 or 20 grains. If given long enough (at least twelve months) this will in many cases arrest disease, diminishing size of joints and permitting of increased movements; it relieves pain markedly. 3. Potassium iodide in 10-grain doses, combined with the guaiacol, increases benefit; its depressing effect to be counteracted by tonics. 4. Thyroid preparations are of value in early cases associated with Raynaud-like symptoms and cramps in extremities. 5. Hot baths, superheated air, or electric light; douche masssage; peat baths or brine baths. 6. Passive movements and massage. 7. Bier's hyperemia, where affected joints few. 8. Fibrolysin followed by massage, where joints more or less fixed owing to fibroid thickenings. 9. Irrigations of colon, where arthritis secondary to chronic colitis. *Luff.* 112

Thyroid preparations useful in many cases of long-standing osteoarthritis and chronic infectious arthritis, probably because of damage to the thyroid gland resulting from its hyperactivity attendant upon continued toxemia. Slow pulse an indication of thyroid failure; emaciation does not preclude it. Dosage of dried thyroid substance ranges from 1½ grains (0.1 Gm.) once daily up to 5 grains (0.3 Gm.) *t. i. d.* in distinct myxedema. Avoid causing headache, diarrhea, or reduction of blood-pressure, and intermit drug from time to time. Thyroid medication necessary for remainder of life where thyroid failure thoroughly established. *Midelton.* 236

Asthma, Bronchial. TREATMENT. Importance of chronic coprostasis and intestinal autointoxication in etiology of asthma shown. Necessity of bowel regulation in the treatment emphasized. *Ebstein.* Page 33

Epinephrin hydrochloride found most effective drug next to morphine in treatment of the asthmatic paroxysm in 31 cases. Ten to 15 drops of 1: 1000 solution injected under or into skin give immediate relief, which is often also lasting. Blood-pressure not increased by it, but rather lowered. Stramonium cigarettes or fumes give comfort in some patients, hypodermics of nitroglycerin in but a few. Atropine safer but less sure than morphine, which should be last resort. Treatment between paroxysms: Remove reflex causes such as deflected nasal septum, sensitive point near inferior turbinates, disordered stomach, and constipation. Overcome obesity where present. Give prolonged course of potassium iodide, 10 to 15 grains (0.65 to 1.0 Gm.) three times daily, and thereafter alternate use of drug for 10-day periods with 10-day intermissions. *Lemann.* 94

Blepharitis. TREATMENT. Marginal blepharitis in children to be treated as follows: 1. Remove crusts 2 or 3 times daily with sodium bicarbonate solution (gr. x to f℥j) or, at first, with warm olive oil. 2. After careful washing rub into roots of lashes a stimulating mercurial ointment (gr. viij of ammoniated mercury or gr. iv of yellow oxide of mercury to ℥j of white petrolatum). 3. If much discharge, especially purulent, cutting of lashes will facilitate cleansing; in worst cases, epilate all lashes involved in pustules. 4. If lid much excoriated, paint 1 per cent. silver nitrate solution on surface daily. 5. Keep lids closed with wet carbolic dressing (1 to 80) for a few days in severe cases, removing it *t. i. d.* to cleanse lids; avoid entrance of solution into eye. 6. Keep child from reinfecting lids with fingers by use of lightly smoked, domed protecting spectacles, or in the very young by cardboard splints bandaged on flexor surface of elbows. 7. Prescribe correcting glasses if required, to remove cause of ocular hyperemia. *Lawson.* 103

Cholera. TREATMENT. Potassium permanganate given internally with some success. Dose, 0.4 to 0.5 Gm. (6 to 7½ grains) *per diem*, dissolved in 400 to 500 Gm. of pure water and given every half-hour. Drug continued two or three days in diminishing doses. Especially valuable in cases with hemorrhage. Iodine tincture given in 42 cases, with 34 recoveries. Dose, 40 to 60 minims daily, dissolved in 250 Gm. of distilled water, given every hour. Copious bowel irrigations with warm iodine solution or 1: 1000 potassium permanganate solution also used with benefit in violent cases. *Logotheti.* 35

Colitis, Mucous. TREATMENT. Apply to abdomen at night towel soaked in magnesium sulphate solution, ½ ounce to 1 pint of water, at 75° F. Irrigate rectum with 2 gallons of same solution at 85° to 90° F. Mucus disappears, and pain and gas formation diminish. Milk diet, with fruit, especially grapes, added, also effective; 1½ quarts of milk to be taken during day and 1 pint of hot milk at bedtime; continue for ten days to two weeks. Crude tar of *Pinus palustris*, mixed with flour and ordered in No. 2 gelatin capsules, gave good results; 2 or 3 capsules one hour after meals. *Joseph.* 42

Calumba-agar, containing solid constituents of 2 c.c. of fl. ext. calumbæ in 1 Gm. of agar, found useful in colitis with mucus in stools (*v.* Constipation). *Einhorn.* 231

Constipation. TREATMENT. Hormonal, 20 c.c. injected intravenously or intramuscularly, found effective in constipation with general atony and in postoperative paresis. *Hoxie.* 170

Medicated agars considered useful. Phenolphthalein-agar, containing 0.03 Gm. of phenolphthalein in 1 Gm. of agar, and rhubarb-agar, containing 1 c.c. of fl. ext. rhei in 1 Gm. of agar, recommended. Prepared by dissolving remedy in boiling agar water solution, thoroughly mixing, evaporating to the original dry agar volume, and grinding up into flakes. Dose, 1 teaspoonful twice daily in water after meals. *Einhorn.* 231

Constipation with Diarrhea. Found in gouty patients, after abdominal and rectal operations, in pulmonary tuberculosis, in achylia gastrica, and in hypochlorhydria with gastrointestinal atony.

TREATMENT. A few (3 to 5) 2- to 5- grain doses of calomel, followed by magnesium sulphate, or sodium sulphate, or a laxative water; in other cases, castor oil in ½- to 1-dram doses 2 or 3 times daily, continued for a month. Ichthyol valuable in cases with much fermentation. Physical treatment with oil or oil-emulsion enemas, hot baths with massage, or hot wet packs changed every 15 to 30 minutes. Rest in bed. Gastric lavage. Well-prepared food. Strong, black coffee with plenty of sugar often useful; also good beer or cream; bread spread with butter and honey; stewed or dried fruit (latter soaked in water); cheese; agar-agar, etc. Modest exercise alternating with rest; salt baths, sitz baths; sensible wearing apparel; correctly fitted corset. *Bernheim.* 69

Coryza, Acute. Aromatic spirit of ammonia and sweet spirit of niter recommended as best agents to "abort" a cold. *Beverley Robinson.* 47

Diabetes Mellitus. TREATMENT. Sodium perborate, applied as a powder, usually twice daily, brought about rapid healing in 3 cases of diabetic gangrenous ulcers. *Herzfeld.* 167

Diarrhea. TREATMENT. Agar medicated with astringents found useful where intestinal mucosa inflamed or ulcerated. Gambir-agar, containing solid constituents of 2 c.c. of tr. gambir comp. in 1 Gm. of agar; tannin-

agar, 0.03 Gm. of tannin to 1 Gm.; simaruba-agar, 1 c.c. of tincture to 1 Gm., and myrtle-agar, 1 c.c. of tincture to 1 Gm., recommended, the last especially in diabetic cases (*v.* Constipation). *Einhorn.* Page 231

Diarrhea, Infantile. TREATMENT. Soy flour useful in summer diarrhea and some forms of intestinal indigestion; given in form of dilute gruel with or without addition of barley flour and later condensed milk or cows' milk. One to 2 level tablespoonfuls of soy flour to the quart suffice at first; later increased to 4 spoonfuls. Soy-bean, barley, and condensed-milk mixtures useful where, cows' milk disagreeing, there is difficulty in finding food sufficiently nutritious for child. Orange juice advisable from time to time to prevent tendency to scurvy. *Ruhräh.* 52

Diphtheria. TREATMENT. Case in which, after a cure with antitoxin, throat cultures showed abundant diphtheria bacilli three weeks after start of disease. Repeated applications to the throat of a dilute culture of *Staphylococcus pyogenes aureus*, made by inoculating 8 c.c. of bouillon with a loopful of a fresh agar growth of the coccus, led to disappearance of diphtheria organisms from throat, thus preventing the child from being a "diphtheria carrier." General condition markedly improved. No untoward effects. *Page.* 166

Eczema. TREATMENT. Alcohol useful as antiparasitic and to relieve itching. Apply 90 per cent. alcohol twice daily to and around lesions before carrying out other local measures. Good results even in rebellious cases. Applicable in all forms of eczema except those with abundant watery discharge. Continue long after affection overcome, to prevent recurrence. *Monatsh. f. pr. Dermat.* 96

Local treatment with heated air employed in 35 cases of eczema in infants, with good results. Applications made once daily for five to ten minutes; affected region then covered with olive oil. Strict dietetic measures also to be enforced. *Perlmann.* 167

Empyema. TREATMENT. Convenient method of drainage of empyema in young children described. After locating pus with aspirating needle, insert narrow-bladed knife under it and enlarge wound just above a rib enough to admit snugly a short drainage-tube of rather stiff rubber, which is held in place by a cuff of slightly larger tubing, a piece of tape slipped over it, and adhesive plaster fastening tape to skin. Connect rubber tube with glass tube passing through cork of a pint bottle and dipping in warm sterile salt solution contained in it. Raise bottle till solution runs slowly into pleural cavity, then lower, thus irrigating pleura. Change salt solution two or three times daily, or as often as necessary to keep it fairly clean. *Kenyon.* 36

Epididymitis, Gonorrheal. TREATMENT. Where preliminary pain at external abdominal ring (vasitis), put patient to bed and support scrotum by strip of adhesive stretched over anterior surfaces of thighs. For established epididymitis, support scrotum in same way, and apply to it following ointment: Mentholis, gr. xv (1 Gm.); ung. belladonnæ, gr. xx (1.3 Gm.); ung. Credé, gr. xxx (1.3 Gm.); ichthyolis, ʒj (4 Gm.); petrolati, q. s. ad ℥j (32 Gm.). If swelling of epididymis does not quickly resolve, strap testicle, as follows: Envelop affected half of scrotum in a square of gauze. Press testicle into bottom of scrotum with thumb and index finger and bind a strip of adhesive above organ, holding it down. Then pass other strips, starting at the first one, around under testicle and up the opposite side until organ is covered. Finally, secure with another transverse strip over the first. Support with suspensory. Renew strapping every other day. *Bethune.* 228

Epistaxis. TREATMENT. Sodium perborate used with success to arrest hemorrhage in epistaxis and after adenoid operations or tonsillotomies. *Herzfeld.* 167

Erysipelas. TREATMENT. Solution of 20 drops of phenol in 25 Gm. (6 drams) of pure neutral glycerin recommended. It is painted over affected area and surrounding skin, but must not come in contact with mucous membranes. *Lodi.* 98

Solution of aluminum acetate recommended for local use in facial erysipelas (*v.* Furuncle). *Stansbury.* 227

Esophageal Carcinoma. TREATMENT. Small amounts of hydrogen peroxide solution of 1 to 2 per cent. strength, sipped at intervals of an hour, facilitate descent of food, even in late cases where rectal feeding has been resorted to. *Liebermeister.* 98

Femur, Fracture of Neck of. TREATMENT. Apply extension apparatus. Control eversion of foot as follows: Thin a medium-sized pillow along one edge and slip this under limb, reaching nearly to heel. Pin securely to bandage supporting the extension straps, roll pillow firmly against limb, and pin at its other edge. Put firm roller bandage around pillow and limb. Pillow should be adjusted to raise heel a little, avoiding pressure on it. Finally, place smaller pillow under popliteal space and fasten to the larger pillow. *Totman.* 228

Furuncle. TREATMENT. Seen early, a superficial furuncle may be aborted by inserting pointed matchstick, dipped in phenol, deeply into its center; if lesion deep, inject several drops of liquefied phenol at base of lesion. For a furuncle seen late in first stage: Scratch off central vesicle and apply a Bier cup. Dress with sterile gauze wrung from normal saline solution with 1 per cent. sodium citrate, after inserting a bit of rubber dam in opening if there be tension. Protect surrounding skin from citrate with ointment, and over citrate gauze apply waxed paper or oiled silk, covered by compress and bandage. Cupping and dressing may be repeated every four hours until slough loose,

when latter is removed with small forceps. Apply citrate only three days. Also give citrate internally, 15 grains (1 Gm.) *t. i. d.* after meals. Where bluish, flabby granulations: Strap edges of wound with adhesive strips, dry granulations, mop with iodine tr., and dust with Bier's powdered silver nitrate. Snip off exuberant granulations. To promote epithelial regeneration, use 8 per cent. scarlet red ointment or amidoazotoluol. Prevent autoinoculation by shaving skin around furuncle and disinfecting with 70 per cent. alcohol, tincture of iodine with benzine, diluted liquor formaldehydi, or aluminum acetate solution. Repeat local disinfection with benzine at each dressing. Where furuncle first seen in stage of softening, incise and drain; latter may be assisted with a Bier cup. For very large lesions or in furuncles of face, inject 3 per cent. novocaine under base, wait five minutes, and remove core from tumor with small curette. Where supposed boils become carbuncles, excise the whole area, controlling bleeding with cautery and compresses, and apply pure liquefied phenol. For recurring furunculosis: Bacterin therapy with killed staphylococci; initial dose, 100 million bacteria, increased by weekly doses up to 1 billion. Yeast also useful. *Skillern.* Page 99

Solution of aluminum acetate recommended for local use. Made with aluminum sulphate and acetic acid, of each, 300 Gm.; calcium carbonate, 130 Gm.; distilled water, 1000 c.c. For use, dilute with distilled water, 1 to 7 or 10, and apply to parts on several thicknesses of gauze, covered with rubber tissue or oiled silk, and a loose bandage. Addition of ¼ volume of alcohol or glycerin to solution avoids wrinkling and whitening effect on skin. *Stansbury.* 227

Gastric Dilatation. DIAGNOSIS. Vomiting, abdominal pain, distention, constipation (occasionally diarrhea), collapse, splashing sounds, and peristaltic movement over stomach, appearing suddenly in the course of pneumonia, should at once suggest acute gastric dilatation.

TREATMENT. 1. Introduce stomach tube and practise lavage as often as distention occurs, even in cases with collapse. 2. Turn patient on right side or face. 3. Interdict food and drink by mouth. 4. Strychnine and eserine hypodermically apparently useful in some cases. *Fussell.* 107

Gastric Neuroses. TREATMENT. Condition nearly always associated with gastric atony and vertical "fish-hook" stomach. 1. Relief from pain (due to hyperacidity) obtained by recumbent position on right side or knee-chest posture for several minutes at short intervals after meals. 2. Peristalsis assisted by massage or having patient clasp left knee and make strong intermittent pressure of thigh against abdomen while lying halfway between prone and lateral position. 3. Helpful suggestion. 4. Abundant nourishment in small quantities at short intervals. 5. Attention to any existing anemia. Rational non-surgical treatment effective in majority of cases. *Greene.* 174

Fresh pineapple juice found useful to relieve anorexia. *Floersheim.* 233

Gastric Ulcer. DIAGNOSIS. Rice, milk, potatoes, and prunes cause positive reaction in benzidine test for occult blood in stomach contents, and hence must be excluded from diet before test is made. *Floersheim.* 105

Watermelon pulp found to cause positive reaction in guaiac-turpentine test for occult blood in feces. *Newbold.* 106

Gonorrhea, Acute. TREATMENT. Method causing arrest of suppuration in three to five days described. Inject 5 to 15 c.c. (¼ to 4 drams) of 0.25 per cent. protargol solution into urethra every half-hour in daytime and every hour at night. To be retained two to ten minutes, during which time urethra is gently massaged from behind forward. Increase strength of solution gradually. Patient should ingest large amount of fluid, in order to be able to urinate before each injection. Continue injections, given as often as possible, two or three weeks after cessation of pus. Then alternate protargol with lead acetate and zinc sulphate, of each, 0.3 Gm. (2 grains) in 200 Gm. (4⅔ ounces) of water. *Kuhn.* 37

Gonorrheal Cervicitis and Endometritis. TREATMENT. I. Acute cases: 1. Confinement to bed. 2. Keep emunctories active. 3. Limit diet. 4. Cleanse vagina frequently with large amounts of hot saline solution or hot water containing boric acid or a weak iodine solution. Use irrigator with nozzle projecting a straight forcible stream, and pinch mucous membrane of introitus around nozzle, to flush cavity satisfactorily. Intrauterine measures and pelvic operation intervention contraindicated. II. Subacute cases: 1. Soften and dilate cervix with Goelet's uterine electrodes and galvanic current. 2. Flush uterine cavity with hot iodine solution, 1 dram (4 c.c.) of the tincture to a quart of water, or silver nitrate, 1: 5000. 3. As condition improves, substitute daily intrauterine injections of iodized phenol (equal parts of iodine tincture and phenol) or 1 per cent. silver nitrate. Use syringe with long pliable nozzle, with its tip wrapped with cotton; inject fluid into cotton and withdraw syringe. Insert iodine-glycerin tampon (1 dram to 4 ounces), which patient is to remove next morning. Remove cotton within uterus at next visit. III. Chronic cases: 1. Puncture, evacuate, and sterilize diseased Nabothian glands. 2. Touch opened glands and erosions about os with pure iodine tincture. 3. Intrauterine irrigations and injections as above, three times weekly. 4. Curettage of uterus, thoroughly scraping internal os and cervical canal, followed by swabbing with iodine tincture and appropriate after-treatment. *Dannreuther.* 100

Gout. TREATMENT. Radium emanations used in 400 cases of gout and chronic arthritis. Patient in closed radium room for 24 to 36 sittings of two hours each. Injections of soluble radium salts near involved joints given in addition; also superheated air, electric light, and brine baths. Absolute rest in bed an adjuvant. Out of 50 cases in which blood was examined before and after treatment, uric acid disappeared in 37 instances, synchronously with marked amelioration. Cases in children particularly benefited, but cases of senile tuberculous and syphilitic arthritis and cases of very long standing, with marked joint changes, not suited for radium treatment. Low purin diet should also be tried for a few weeks or months; if ineffective, replace it by simple mixed diet, with as much of green vegetables and fruit as possible. *Gudzent.* Page 95

Hay Fever. TREATMENT. Calcium creosote solution diluted with 8 to 10 parts of water recommended; throat and nasal fossæ to be sprayed every hour or two for two or three days. Potassium iodide, 5 grains *t. i. d.*, effective in hay asthma; arsenic may be added with advantage. *Kolipinski.* 77

Hemophilia. TREATMENT. Bleeding from wound in a hemophilic boy, previously uninfluenced by any remedial agent, checked by allowing blood from finger of a normal individual to drop on the wound. A clot formed immediately. *Sayer.* 168

Hemorrhoids. TREATMENT. Injection method used in 55 cases with satisfactory results. After suitable preparation, place patient on left side, with knees flexed. If tumor presents, apply compress soaked in 2 per cent. phenol to it and allow to remain two or three minutes; if not, use rectal speculum. Solution to be injected into pile consists of equal parts of phenol, glycerin, and sterile water, and of this 2 to 4 minims (0.12 to 0.25 c.c.) are used, according to size of growth. After injection tumor should be forced back above sphincter, and patient recline for next six hours and abstain from straining, etc. If prolapse should occur, pile should be returned at once and hot compresses frequently applied. Pain after operation may be relieved, if necessary, with a few 2½-grain (0.15 Gm.) tablets of Dover's powder, though it is rarely severe. Inflammation of pile occurred in 3 cases of series. After disappearance of tumor a small ulcer may remain, which will rapidly heal on applying silver nitrate solution (10 or 15 grains to the ounce) every two or three days. *Wilkinson.* 168

Hepatic Affections. TREATMENT. Combination of sodium salicylate and sodium benzoate found useful for cholagogue and "flushing-out" effects in various disorders, especially suppurative angiocholitis, cholecystitis, and lithiasis. Sodium salicylate induces flow of concentrated bile; sodium benzoate, of dilute bile. Relative amounts of two salts to be varied according to indications. Formula suggested: Sodium benzoate, 0.75 Gm. (12 grains); sodium salicylate, 0.5 Gm. (8 grains); sodium borate, 0.25 Gm. (4 grains); rhubarb, 0.3 Gm. (5 grains); to be taken *t. i. d. Polain-Cartier.* 38

Hernia, Inguinal. TREATMENT. In infants use truss; to be kept applied continuously. After two years, if hernia still persists, urge radical cure, if possible. *Campbell.* 169

Hip-joint, Congenital Dislocation of. TREATMENT. Manipulative method used in 33 cases. If used at earliest possible time after infancy, the method may be expected to yield stable articulation with perfect function in 60 to 70 per cent. of cases; in remainder condition is usually much improved. Attended by little or no danger in children below 8 years of age. *Simpson.* 38

Hodgkin's Disease. TREATMENT. Röntgen rays cause prompt reduction of glands. Whenever recurrence is manifest, renew the treatment. External tumors can thus be controlled a long time, or until patients succumb to deep involvement. *Boggs.* 229

Hyperchlorhydria. TREATMENT. Rhubarb and soda, or rhubarb and magnesia, either in mistura rhei et sodæ or in Gregory's powder, useful in gastric disorders with fermentation or hyperacidity. *Beverley Robinson.* 47

Hyperidrosis. TREATMENT. For sweating feet: Bathe them every night with 1 per cent. potassium permanganate solution and dry thoroughly. Next morning dust on following powder: Potass. permang., ℥ij (8.0); alumin. pulv., gr. xx (1.25); talc. pulv., ℥j (32.0); zinci carbonat. et oxid., of each, ℥ss (16.0); or else, have patient wear white stockings previously soaked in saturated boric acid solution. Where bromidrosis, use dilute formalin. For sweating in axillæ: Bathe with weak vinegar, and apply following powder on gauze pad: Acid. salicyl., gr. xx (1.25); amyli pulv., ℥ij (8.0); alumin. pulv., q. s. ad ℥iss (48.0); or else, use following lotion: Betanaphtholis, ℥j (4.0); glycerini, ℥ij (8.0); alcoholis, q. s. ad ℥iiss (80.0). Where persistent bromidrosis, short exposures to X-rays may be effective. *Meachen.* 177

Hyperthyroidism. DIAGNOSIS. Elevation of temperature found an early symptom in many cases, especially mild ones. When, in absence of acute or other tangible disease, there have been loss of weight and augmented nitrogen and phosphoric acid excretion, and when, after administration of a thyroid or iodine preparation, there occur the characteristic psychoneurotic and cardiac symptoms of excessive thyroid activity, elevation of temperature is a thyrotoxic phenomenon. *Stern.* 39

Hypothyroidism. DIAGNOSIS. Blood showing mild leucocytosis and relative lymphocytosis with eosinophilia from 3 per cent. up

is highly suggestive of thyroid insufficiency. *Collins and Kaplan.* Page 40

Inertia, Uterine. TREATMENT. In secondary inertia and where pains ineffective owing to hydramnios or twin pregnancy, intramuscular injection of pituitary extract is indicated. May also be employed in febrile states. Where complications expected after birth, inject pituitary extract a few minutes before end of second stage. Where used in first stage, time to inject is when os is a little less than size of palm in primiparæ, and when it will just admit 2 fingers in multiparæ. *Jaeger.* 234

Intertrigo. TREATMENT. In infants acute enterocolitis, frequently the cause of intertrigo through the irritating discharges, should be overcome by dieting: stop milk; give rice, arrowroot, or albumin water, with plenty of pure water to allay thirst. Internally, give sodium phosphate, 5 to 10 grains (0.3 to 0.6 Gm.) every morning for two or three days, usually followed by castor oil, 1 dram (4.0 c.c.). Locally, soak parts with oatmeal water. Give an oatmeal bath, by soaking bag filled with oatmeal in tub filled with boiling water for one-half hour, then allowing to cool to 100° F. and giving child hip bath. Then use following salve: Calamin and zinc oxide, of each, 3 parts; petrolatum, 50 parts. Dust parts with cornstarch or wheat flour. Use salve three times daily, previously cleansing parts with olive oil, if necessary. *Fischer.* 170

Intestinal Paresis, Postoperative. TREATMENT. Pituitary extract used in 21 laparotomy cases. Dose, 16 minims (1 c.c.), commenced six hours after operation and repeated every few hours until 18 doses given. All patients passed flatus freely within a few hours, and were free of pain and distention. In all cases but 2, bowel action was obtained after a simple enema. Three intramuscular injections of 1 c.c. each recommended during first twenty-four hours as routine practice in laparotomy cases. Pulse rate remains much lower than usual. *Bidwell.* 44

Jaundice, Catarrhal. TREATMENT. Cold injections of water or normal saline solution recommended, favoring biliary flow by promoting peristalsis. *Polain-Cartier.* 38

Laryngitis, Acute. TREATMENT. Freshly powdered cubeb, taken frequently and in moderate amount dry on tongue, found of service in acute throat disorders. *Beverley Robinson.* 47

Lupus. TREATMENT. Pfannenstiel's method found useful in lupus of nasal mucous membranes. Give patient 45 grains (3 Gm.) of sodium iodide daily, divided into 6 doses. Every morning cleanse nasal cavity of crusts with nasal douche containing sodium chloride and boric acid, and, after drying, insert tampon of sterile gauze, in contact with affected parts. Have patient keep tampon constantly moist with 2 per cent. hydrogen peroxide solution. Free iodine is thus liberated from iodide excreted by nasal mucosa, exerting its effect on lesions. In early cases ulcerations heal in one to three weeks. *Sequeira.* 102

Malaria. DIAGNOSIS. Intensely black blood-pigment in the urine considered a pathognomonic sign of malaria. Centrifugalize urine in a clean tube for five minutes and examine drop from bottom under high power. Pigment appears in very fine granules, almost always grouped; somewhat larger granules; large polymorphous masses, and granules inclosed in hyaline plaques or leucocytes. *Urriola.* 232

Mastoiditis. DIAGNOSIS. A small mastoid process with thick outer cortex and small antrum is especially subject to "atypical" mastoiditis, condition escaping detection until serious complications appear. Suspicious symptoms in such cases are: 1. Discharge from ear more profuse than one would readily expect from middle ear alone and continuing profuse for two or three weeks. 2. Increased swelling of posterosuperior wall of external auditory canal. X-ray found useful for early diagnosis in a number of cases. *Crockett.* 41

Blurring of outline of tip of mastoid elicited by grasping both mastoids anteriorly and posteriorly between fingers and noting difference of definiteness of outline on the healthy and abnormal sides found valuable as corroborative evidence in early, doubtful cases of mastoiditis. Swelling from otitis externa may be confusing, but this is usually reduced in a few days by local treatment and ice-bag, while blurring of mastoid remains. *Alderton.* 104

Melæna Neonatorum. ETIOLOGY. Condition ascribed to oral infection; "mouth-cleansing" after birth considered inadvisable, giving chance for introduction of organisms. TREATMENT. Desperate case saved by injections of human blood-serum, doses of 20, 18, 10, 6, 18, 14, and 6 c.c. being given in four days. Method of securing serum was ordinary venesection (after careful skin cleansing), serum being allowed to separate spontaneously from clot in ¼-liter flasks. Injections made with antitoxin syringe anywhere from scapulæ to buttocks. *Nicholson.* 172

Nasal Accessory Sinuses, Inflammation of. TREATMENT. In acute cases: 1. Calomel followed by a saline, then by diaphoresis with hot lemonade. 2. Liquid diet. 3. Acetylsalicylic acid or hexamethylenamine, to reduce suppuration. 4. Atropine sometimes valuable, but to be used with care. 5. Locally, application with cotton swab of 2 per cent. cocaine solution, followed by epinephrin, then by 4 per cent. antipyrin. Spray of epinephrin in alkaline medium every two or three hours. 6. After thorough contraction of mucosæ, clear opening of sinus or sinuses with swab and irrigate nose gently with warm saline solution containing a little sodium bicarbonate. 7. Oily spray of menthol and camphor. 8. Mild suction with

exhaust bulb or Brawley apparatus. 9. Leucodescent lamp to relieve discomfort. 10. Hot applications. 11. Irrigation of sinuses (difficult, sometimes impossible without removal of bone). If condition unrelieved in a few days, operation. In subacute cases, same treatment + autovaccines. Latter also useful to hasten recovery in acute cases. *Miller.* Page 173

Nervous Affections. DIAGNOSIS. External malleolar reflex (Chaddock's sign), indicating involvement of pyramidal tracts, found in 20 cases to be equal in value to the extensor plantar reflex (Babinski). It is more delicate, appears earlier, and often lasts longer than the Babinski. Consists of irritating outer side of foot below external malleolus with nail file; if positive there occurs dorsal extension of toes. *Ingram.* 95

Otitis Media, Acute. TREATMENT. Relation of acute pharyngitis, nasal-sinus, middle-ear, and mastoid inflammations to an "active autotoxic state" of the system emphasized. Calomel in 1/10-grain (0.006 Gm.) doses, frequently repeated up to 1 or 1½ grains, found valuable to stimulate defensive powers of body and shorten convalescence. Used in combination with local treatment. Calomel, followed by castor oil or salines, given every other day. *Snow.* 42

Pain, Local. TREATMENT. Combination of menthol and methyl salicylate in hydrated wool-fat, covered with cotton and gauze bandage, recommended to relieve local pain where skin is intact. *Beverley Robinson.* 47

Paralysis Agitans. DIAGNOSIS. New sign, present in the early period of rigidity, when diagnosis difficult, described. Consists of a "cog-wheel," intermittent resistance felt when examiner grasps wrist with one hand, steadies arm above elbow with the other, and makes rapid flexion and extension of arm. Never found present in other diseases. *Moyer.* 176

Paralysis, General. TREATMENT. Salvarsan administered intravenously in a case of paresis in maniacal stage, with marked improvement. *Holland.* 73

Placenta Prævia. TREATMENT. Absolute quiet, rupture of membranes when required, and irrigation with hot water recommended. Water should be at 45° to 48° C. (113° to 118° F.), and at least 7 or 8 liters of it should be used. Repeat irrigation if necessary to check hemorrhage. Seventy cases thus treated without a death. Infection from tampon and mishaps in version or introduction of bag thereby avoided. When hemorrhage arrested, spontaneous expulsion of fetus to be patiently awaited. Instrumental dilatation contraindicated. *De Bovis.* 44

Plague, Bubonic. TREATMENT. Early crucial incision into the swollen glands employed in 62 cases, with 54 recoveries. Causes immediate improvement in patient's condition, temperature being lowered and headache alleviated. Wounds dressed with iodine lotion, 1 dram to the ounce of water. *Nesfield.* 45

Pleuritis. DIAGNOSIS. X-ray studies showed that location of fluid in chest in serofibrinous pleurisy depends upon the position assumed most constantly by patient during acute stage, and that exudates of this type are but slightly, if at all, mobile. These facts are of assistance in differentiation of serofibrinous from other varieties of effusion. *Engelbach and Carman.* 106

Pneumonia, Lobar. TREATMENT. Creosote inhalations and moderate bloodletting, especially with leeches, recommended. *Beverley Robinson.* 47

Stock pneumobacterins, in doses of 25 to 600 millions, used in 20 cases, with 15 per cent. mortality; 30 other similar cases, under usual methods of treatment, showed 40 per cent. mortality. In some of the cases, strikingly prompt benefit followed use of bacterins; in others results were less marked or *nil.* Results seemed more definite with the larger doses. Dosage can be adjusted according to clinical phenomena; where malaise, headache, chilliness, or definite rigors, with rise of temperature, follow an injection, it is unwise to increase dose. *Robertson and Illman.* 107

Intramuscular injections of quinine and urea hydrochloride used in 192 cases of lobar and lobular pneumonia; mortality 12 per cent. Initial dose, 15 to 25 grains (1 to 1.6 Gm.), repeated in three or four hours, and perhaps once or twice again in first twenty-four hours. Same plan on second day of treatment, and on third, if necessary. Smaller doses, 5 to 10 grains, then sometimes continued by mouth. Results: Temperature and pulse rate gradually fall, respiration more rapidly; termination by lysis in five to twelve days. Procedure in injecting: Paint skin with iodine tincture, fill syringe with 50 per cent. solution of the quinine salt in sterile water; inject deeply into a muscle, emptying syringe thoroughly; withdraw needle, and seal puncture with collodion; no local ill results. Additional treatment: The usual hygienic and drug measures; saline infusion; sodium bicarbonate or ammonium compounds in sufficient amount to keep urine alkaline; tincture of ferric chloride when quinine withdrawn. *Solis-Cohen.* 235

Pneumoperitoneum. DIAGNOSIS. In presence of free gas in peritoneal cavity, there occurs a concentric diminution of area of hepatic dullness, *i.e.,* dullness disappears at same time from upper border of liver downward and from lower border of liver upward. In tympanites, on the other hand, liver dullness disappears from below upward only. This distinction found useful in early diagnosis of perforation in typhoid fever. *Berg.* 108

Pneumothorax. DIAGNOSIS. Positive coin test, displacement of heart, and, in right-sided cases, displacement of liver are the most important diagnostic signs, occurring in about 90 per cent. of cases. Succussion splash and metallic tinkle occur in 30 or 40 per cent. *Cruice.* Page 46

Poliomyelitis, Acute. ETIOLOGY. Poliomyelitis is propagated by dust. Nasopharynx is probably point of entry. *Neustaedter and Thro.* 46

DIAGNOSIS. Lumbar puncture shown to be valuable in distinguishing poliomyelitis of meningeal type from acute cerebrospinal meningitis. Negativity of cerebrospinal fluid in poliomyelitis diagnostic; in meningitis, fluid shows marked turbidity, coarse clot formation, great excess of albumin, copious deposit of polymorphonuclear cells, and meningococci. *Forbes.* 46

Importance of thoroughly cleaning out alimentary canal at earliest period of disease emphasized; copious enemata high up found useful. Retention of urine may also require treatment with warm baths, hot compresses to abdomen, or, ultimately, catheterization. *Bogardus.* 175

Postnasal Catarrh in Children. TREATMENT. If condition acute, paint throat several times daily with boroglyceride, or, in older children, spray with a ¼ grain to the ounce solution of tartrated antimony while patient inspires deeply. Later, add an equal amount of glycerite of tannin to the boroglyceride. Where painting throat resisted, instill into nostril several times daily, while child lies back with head on pillow, a solution of 5 to 10 grains of resorcin to the ounce of saline solution, 10 grains of boric acid to the ounce of water, or 15 grains of sodium bicarbonate to the ounce. As redness of pharynx fades, apply pure glycerite of tannin or a paint of 12 grains of iodine and 15 grains of potassium iodide to the ounce of glycerin, with 5 drops of oil of cinnamon or peppermint. After all redness gone, use an astringent iron paint of 1 dram of the stronger iron perchloride to an ounce of glycerin. For anorexia: an iron tonic; stay in country or at seaside. Keep child well protected from cold for some time after. *Eustace Smith.* 34

Psychoses. TREATMENT. Seven cases—4 in children—reported in which pronounced mental disturbances were shown due to dental impaction, alveolar abscess, or other conditions affecting teeth, and cure or great improvement resulted upon remedying these states. Importance of X-ray examination of teeth and jaws in psychoses emphasized. *Upson.* 129

Puerperal Sepsis. TREATMENT. Intravenous injections of mercury bichloride used in 11 cases, with 6 recoveries. Measure considered worthy of trial in severe cases. Twenty drops of a 1 per cent. solution injected once or twice daily; 1 to 4 grains of bichloride used during the treatment. Precautions necessary: 1. Teeth to be carefully cleansed. 2. Salines to be omitted during treatment. *Stowe.* 110

Outdoor treatment of severe puerperal infections found usually to bring about rapid improvement and to lower mortality by nearly 20 per cent. Sunlight as important as air. Patients kept out of doors on a wheel bed, to be moved in again when necessary. General condition strikingly well maintained in the prolonged pyrexias. Other measures: Iron, arsenic, strychnine, alcohol, fluids copiously by mouth, saline enteroclysis in severe cases, alcohol and cold sponge baths for pyrexia, hot or cold applications for abdominal pain and distention. Curettage contraindicated, increasing mortality 10 per cent.; local treatment to be limited to a single intrauterine douche of sterile salt solution. *Young and Williams.* 236

Rheumatism, Acute Articular. TREATMENT. *Streptococcus pyogenes* vaccine used in 6 cases, in 4 of which no salicylates were given, with good results. Temperature quickly fell in every case, pain ceased, and inflammatory phenomena disappeared. Stock vaccine from several strains of streptococcus used in these cases, but author thinks it preferable to employ a mixed streptococcus and staphylococcus (*aureus* and *albus*) vaccine. *Wolverton.* 48

Rheumatism, Chronic. TREATMENT. In rheumatic conditions associated with anemia and in sore throat of rheumatic origin, following mixture recommended: Dissolve 1 dram (4 Gm.) of sodium salicylate in 2 ounces (60 c.c.) of water. Add liquor ferri perchloridi, plus an ounce of water, giving dark purple mixture. Then add 1 dram of potassium bicarbonate dissolved in 1 ounce of water, and fill up bottle to 8 ounces with water. *Drinkwater.* 51

Lime-poor diet found useful in certain forms of subacute and chronic arthritis, especially deforming arthritis, cases with joint pains following acute polyarthritis, and cases of chronic spinal ankylosis. Cases should be selected by test-diet, to make sure of calcium retention, as other patients will not respond to the treatment. Articles of food allowed in lime-poor diet: White or aleuronat bread, rice, tapioca, wheat flakes, sago, tomatoes, mushrooms, white of egg, meat bouillon, beef, calves' liver, tongue, sweets, vegetable fats, light beer, carbonated waters, port. Distilled water to be used in preparation of food. After six or eight weeks restrictions may be somewhat relaxed. *Hirschberg.* 110

Rhus Poisoning. TREATMENT. Aluminum acetate solution recommended for local application (*v.* Furuncle). *Stansbury.* 227

Ringworm, Eczematoid. Fifteen cases studied. Three main types: (1) Acute vesiculobullous, bursting out suddenly like acute vesicular eczema; exudation into vesicles and bullæ commonly pinkish, owing to

blood. (2) Chronic intertriginous of the toes; white masses of epithelium between toes with definite margin and slight vesiculation at dorsal edge of interphalangeal skin; intense itching. (3) Chronic hyperkeratotic of soles and palms, with overgrown horny layer and scattered small indolent pustules. DIAGNOSIS microscopic; demonstration of *Epidermophyton inguinale*, an ectothrix, or other organism. TREATMENT. Ointment of 5 per cent. benzoic and 3 per cent. salicylic acids in soft paraffin and cocoanut oil. For feet and hands can increase strength up to 1 dram benzoic and ½ dram salicylic acids to ounce. Where this fails, use 1 dram of chrysarobin in equal parts of chloroform, alcohol, and acetone to the ounce; apply on rising, pulling socks over it as soon as dry; wash off at bedtime. *Whitfield.* Page 96

Sciatica. TREATMENT. Where acute attack, in spite of the usual measures, persists longer than ten to fourteen days, sulphur baths or hot carbon dioxide baths (102.7° to 104° F., and lasting twenty minutes) should be employed, or heat applied in other ways. If ineffective, author counsels treatment by injections of saline solution and air: 1. Injection of 800 to 1000 c.c. of air, filtered through cotton, under skin on outer aspect of leg. 2. Injection of 60 to 80 c.c. of 0.8 per cent. salt solution, with 0.01 to 0.02 Gm. of novocaine added, just below sacrosciatic notch, as close to nerve as possible. 3. Injection of 10 to 20 c.c. of salt solution, with 0.01 Gm. of novocaine into epidural space of inferior lumbar region, needle being passed in and up through coccygeal notch; preliminary anesthesia of course of injection with novocaine. 4. Where very severe pain and contractures of lumbar muscles, injection of 10 to 15 c.c. of salt solution between third and fourth lumbar vertebræ into epidural space. Injections to be repeated at intervals of three or four days, substituting 1 to 1.2 per cent. for 0.8 per cent. saline. Two to five series of injections cure obstinate cases. *Sicard.* 114

Semilunar Cartilage of Knee, Dislocation of. TREATMENT. Mold piece of sole leather 4 inches long and 1¾ inches wide to inner side of knee, first soaking it in water and cutting edges smooth. Fasten over the displaced cartilage by adhesive straps—2 vertical, 1 horizontal, and 1 oblique—and cover with fairly firm bandage. Patient may walk as usual, notwithstanding soreness. Bandage renewed every ten days. After 3 such treatments condition is well, an aseptic adhesive inflammation having taken place, and only a bandage need be used. *Chandler.* 171

Sinuses. TREATMENT. Following paste used with success in treating a discharging sinus in a breast cancer, after Beck's paste had failed: Bismuth subnitrate, 30 Gm. (1 ounce); petrolatum, 60 Gm. (2 ounces); white wax and paraffin, of each, 5 Gm. (80 grains), and iodine tincture, 2 Gm. (30 minims). The tincture is added after other ingredients mixed. Paste to be stirred when used. Where large amount to be employed, diminish proportion of iodine. *Green.* 177

Skull Depressions at Birth. TREATMENT. Persistent firm pressure with fingers of both hands upon bone surrounding depressed area found effective, causing depressed bone to snap back to normal position. *Hoffmann.* 102

Small-pox. TREATMENT. Mixture of 10 per cent. iodine and 90 per cent. glycerin painted over pustules 2 or 3 times daily in 85 cases; caused drying of lesions and arrest of tissue destruction, and prevented pock-marks. Pustules on face may be opened with sterile instrument and touched with iodine tincture. Desquamation frequently almost completed in four to six days. All cases recovered. *Rockhill.* 115

Splanchnoptosis. TREATMENT. Simple method of supporting viscera described: Shave hair from lower abdomen; place strip of zinc oxide adhesive plaster 2 to 2½ inches wide by 5 to 6 inches long across extreme lower abdomen; attach to each end of it a bandage of same width to reach around body above iliac crest and be fastened behind; have bandage well padded with cotton. Avoid skin irritation by plaster by removing it occasionally, cleansing skin, and using a dusting powder. Improve general and local muscular tone by means of massage, electricity, treatment of gastrointestinal tract, correct living, and suitable diet. *McCaskey.* 238

Sterility. TREATMENT. Case of sterility, with azoöspermia, due to bilateral gonorrheal epididymitis eleven years before, in which bilateral epididymodeferential anastomosis proved curative, spermatozoa reappearing about a year after the operation. *Delbet.* 98

Syphilis. TREATMENT. Salvarsan given intravenously in 10 pregnant women in doses of 0.5 Gm. and subcutaneously in 8 newborn infants in doses of 0.03 Gm. Injections in women in dose mentioned found to be not without danger to fetus, pronounced weakening in heart-sounds being noted in days succeeding injection in one-half the cases. Child of a mother given first injection of salvarsan five and one-half months before parturition was born healthy; a child born seventy-two days after salvarsan injection was syphilitic. In the [illegible] born, salvarsan was found to act promptly on pemphigus and to cause disappearance of spirochetæ from lesions; it is capable of producing prompt and lasting recovery from hydrocephalus of syphilitic origin. Smaller doses now advocated by author: 0.2 Gm. for pregnant women, repeated in six days; 0.01 for newborn infants, repeated twice or thrice at six-day intervals. *Bar.* 49

Emulsion of salvarsan in lanolin oil found a satisfactory mode of administration in 30 cases. *Burke.* 50

Tabes Dorsalis. TREATMENT. Salvarsan administered intravenously in 4 cases, along with hydrotherapeutic measures, with striking improvement. *Holland.* Page 73

Tachycardia, Paroxysmal. TREATMENT. Attack of tachycardia in a woman relieved as follows: Patient being seated, physician's right hand was placed flat over heart, left hand on back, and patient directed to take deep breath, close glottis, and fix strongly walls of chest. Chest walls were then squeezed with some force, attempting to exert pressure on upper part of heart. Immediate relief and fall of pulse rate from 220 to 110. *Rich.* 233

Tetanus. TREATMENT. Phenol injections used in 5 consecutive cases, all recovering; 2 other cases treated with antitoxin died. Ten minims of 10 per cent. solution of pure phenol in sterile water, diluted to 30 or 40 minims, injected deep into muscles, at first every three hours, later at longer intervals as improvement appeared. Injections made into buttocks, deltoids, or pectorals. No untoward results. Urine, however, should be watched for smoky color, as a precaution. Severity of convulsions always diminished by the treatment, sometimes after third or fourth dose. In fully developed cases, second dose to be given one hour after first. Original wound to be excised or cauterized, as usual, with strong solutions of phenol, silver nitrate, or nitric acid. *Kintzing.* 115

Tetany. TREATMENT. Removal of whey from food given to infants with tetany found advantageous. Suspension of curds of wheyless milk proved useful as food. Best prepared as follows: Bring milk to a boil, then cool to 107° F. Add chymogen, 1 dram to the quart, and keep at 107° for half an hour. Strain through cheesecloth and allow to drain an hour. Finally, put curds through fine-meshed sieve, and suspend in a solution of arrowroot flour (1 level tablespoonful to the quart). *Grulee.* 230

Tonsillitis, Acute. TREATMENT. Tincture of iodine applied locally in 400 cases in children, with unusually prompt cures. Also used in pharyngitis, otitis media, tonsillar and nasal diphtheria, laryngitis, stomatitis, etc. For a milder application deep down in throat or in nose, equal parts glycerin and iodine tincture is satisfactory. In acute contagious diseases applications of iodine tincture to throat are of prophylactic value, combating spread of infection. *Sill.* 171

Trachoma. TREATMENT. Subconjunctival injections of diphtheria antitoxin used in 50 patients, 30 being practically cured and 20 greatly improved. After turning lids, eyes first washed with boric acid and saline solutions, then 1 c.c. fresh antitoxin injected in each lid from within outward. Lids then returned to normal position and another cubic centimeter injected under skin and muscle of upper lid. Inflammatory reaction for thirty-six hours, then disappearance of granules. Three or four such treatments given successively. *Pachopos.* 178

Tuberculosis. TREATMENT. Tuberculin applied locally in 10 cases, comprising suppurative cervical adenitis, anal fistula, and sinuses, with early cures in previously rebellious cases. Parts first irrigated with salt solution, then tuberculin solution sprayed on, or, in sinuses, introduced with syringe and flexible cannula. Mouth of sinus sealed with collodion for several hours. Initial dose must be small; later dose is carefully increased, avoiding general reaction. Locally there is pronounced reaction at first, then stimulation of processes of repair. *Beasley.* 56

Tuberculosis, Pulmonary. DIAGNOSIS. Hemoptysis occurring without warning in young adults, and unassociated with further signs or symptoms of tuberculosis, is probably of tuberculous origin and should be so treated. Hemoptysis in pneumonia, bronchitis, asthma, or following trauma should lead to suspicion of an underlying tuberculous process. *Bartlett.* 101

TREATMENT. Citrate of iron hypodermically found very efficient in relieving the secondary anemia in 257 cases, 70 per cent. of which were advanced or far advanced cases. Employed routinely where reduction in hemoglobin greater than 10 per cent. Dose, 0.05 Gm. (5/6 grain), injected in buttock. Italian preparations found least irritating. Maximum benefit attained after 30 to 40 consecutive daily doses. *Bullock and Peters.* 32

Comparative study of 146 cases receiving tuberculin and 234 treated by hygienic-dietetic method alone. Conclusion reached that tuberculin is valuable in tuberculosis, especially in moderately advanced cases, and is of special value as a protection against relapse. Autogenous vaccines used in 75 other cases; temperature rapidly returned to normal, expectoration diminished, and hemorrhage was rare. *Pettit.* 57

Creosote carbonate, 10 grains in capsules every three or four hours, used with satisfaction in cases of tuberculosis with sudden symptoms of pneumococcic infection (shown by malaise, moderate rise of temperature, followed by bloody sputum and preponderance of pneumococci in saliva). *F. N. Robinson.* 152

Treatment of cough discussed. Facilitate early morning cough with glass of hot water or milk with or without 1 dram of whiskey or brandy, 5 or 10 grains of sodium bicarbonate, or a little Saratoga Vichy. For irritative cough, avoid sources of irritation, such as rapid talking, laughing, smoke, etc.; control the desire to cough. Deep-breathing exercises, change of position in bed, sucking ice, sipping orange juice, demulcent lozenges. Where pharyngeal irritation, use slightly astringent lozenges: Ext. glycyrrhizæ puri, potassii chloratis, ana gr. xv (1); olei menthæ pip., ♏j-ij (0.06-0.12); ext. glycyrrhizæ puri, ʒiiss

(10); ft. in trochiscos no. xxx. Steam inhalations, with 3j-ij of cpd. tr. of benzoin or oil of pine to a pitcher of hot water. Where bronchial secretions abundant: Inhalation from perforated zinc mask (Robinson's inhaler) of 10 drops of equal parts of alcohol, creosote, and chloroform. For pharyngeal irritation, also try sprays of 1 per cent. menthol or pine oil in benzoinol or albolene, or a mixture of equal parts of menthol, camphor, and eucalyptol in 100 parts of benzoinol. For night cough: Warm drink before retiring; warming the bed; cross binder, above and below shoulders and across chest and back, previously dipped in cold water (60° F.) and covered with similar dry cross binder and a flannel jacket; renew in three hours or leave on all night. Strapping chest, where pleurisy. Sometimes counterirritation with iodine tincture or blisters over the apices or other site of irritation. For nervous cough: Bromides in 10- to 20- grain doses, chloral hydrate in 5-grain doses, or a combination of the two. Where wheezing and much secretion: Belladonna tincture, 10 to 20 minims, or atropine sulphate, gr. $\frac{1}{100}$ to $\frac{1}{50}$. Codeine, gr. $\frac{1}{12}$ at first, then $\frac{1}{8}$ or $\frac{1}{4}$ every two hours; heroine, in smaller doses; finally morphine, $\frac{1}{24}$ grain, increased if necessary. For abundant expectoration: Respiratory exercises, change in position, cross binder, and especially creosote inhalation and atropine. *Meara.* Page 239

Typhoid Fever. DIAGNOSIS. Russo's test found a valuable diagnostic aid in early cases. To 4 or 5 c.c. of patient's urine add 4 drops of 0.1 per cent. aqueous solution of methylene blue. After thorough admixture examine against light; a mint- or emerald-green color is positive, whereas any bluish tint renders test negative. Urines containing bile also give the test; therefore, this must first be excluded. *Rolph and Nelson.* 58

Early recognition of perforation facilitated by observation of concentric diminution of liver dullness. (See Pneumoperitoneum.) *Berg.* 108

Careful, repeated leucocyte counts claimed to afford earliest reliable means of typhoid diagnosis for general practitioner. Characteristic leucocytic picture: 1. Leucopenia, progressive, very likely preceded by slight leucocytosis. 2. Initial moderate polynucleosis, lasting first four to eight days. 3. Progressive, marked lymphocytosis, displacing polynucleosis and lasting well into recovery. 4. Increase in large mononuclears, beginning with onset of disease. 5. Sudden, early, and complete disappearance of eosinophiles. *Hultgen.* 116

TREATMENT. Ipecac used in 6 cases with good results. In every case but 1 patient became afebrile within four days. Dose in the earlier cases, 30 grains (2 Gm.) on first evening, diminished daily by 5 grains down to 10 grains (0.65 Gm.); in other cases, 10 grains morning and evening, later decreased to 10 grains once daily; drug was given in salol-coated pills, preceded by tincture of opium to prevent vomiting. *Frazier.* 103

Lumbar puncture twice performed in a case with intense, persistent headache, second puncture bringing relief. *Oddo and Monges.* 178

Uncinariasis. TREATMENT. Beta-naphthol in 3 doses of 30 grains each at intervals of two hours, followed, again in two hours, by 6 drams of magnesium sulphate, found to expel 97.52 per cent. of total number of hookworms present. Thymol, in same dose, expelled 97.87 per cent., but caused serious constitutional disturbance. A 60-grain beta-naphthol treatment expelled 86 per cent. It was given as follows: Beta-naphthol, 4 drams (16); mucilage of tragacanth, 1 ounce (32); peppermint water, to make 6 ounces (192). *Nicol.* 230

Uremia. DIAGNOSIS. Depression of reflexes and positive Babinski phenomenon found valuable as a very early indication of oncoming uremia. Present in the stage of "preuremia." *Curschmann.* 48

Urethritis. DIAGNOSIS. Improved method of differentiating anterior from posterior urethritis described. Slowly inject 1 c.c. of 0.5 per cent. aqueous solution of basic fuchsin into anterior urethra and have it retained one-half to one minute, with slight massage. Allow fluid to escape and have patient urinate in 2 high glasses. If only stained shreds are present, there is no posterior urethritis; if only white, unstained shreds, infection is in posterior urethra; if both stained and unstained, process is both anterior and posterior. *Wolff.* 118

Vaccination Site. TREATMENT. Picric acid applied to vaccinal lesion in 22 children, to harden tissues and prevent local infection. Four per cent. solution in 95 per cent. alcohol painted over and around vaccinal site forty-eight hours after vaccination and daily thereafter. Inflammatory reaction and constitutional disturbance lessened. No interference with success of vaccination. *Schamberg and Kolmer.* 118

Valvular Disease, Cardiac. DIAGNOSIS. To determine whether a murmur is systolic or diastolic when rate is rapid or murmur unusual, make intermittent pressure on radial artery to correspond in time with the murmur; if the finger, pressing synchronously with the murmur, feels the radial pulsations, murmur is systolic; if not, diastolic. *Long.* 167

Varicose Ulcers. TREATMENT. Stimulate granulations with silver nitrate (30 grains to the ounce), cover ulcer with sterile gauze, and apply long adhesive straps to skin on either side of lesion till skin well wrinkled. Have foot elevated on pillows till it returns to normal size. Change adhesive straps upon alternate days or oftener. Massage and attention to bowels. Linen elastic stockings, put on over white stockings to absorb perspiration, after ulcer cured. *Gills.* 178

Vincent's Angina. DIAGNOSIS. Signs distinguishing it from lacunar tonsillitis are: 1. Absence of fever. 2. Pain more localized on affected side, and is severe, lancinating. 3. General malaise and physical exhaustion very marked.

TREATMENT. First perform gentle curettage of the tonsillar crypt involved. Then apply 12 per cent. silver nitrate solution. *Wherry.* Page 58

Salvarsan used locally, first in solution, then in powder, in a severe and obstinate case; prompt recovery. *Achard and Flandin.* 118

Vomiting of Pregnancy. TREATMENT. 1. Magnesium carbonate, 2 drams; magnesium sulphate, 1 ounce; mint water (1:40), 1 ounce; water, to make 8 ounces; wineglassful to be taken early in the morning. Cascara given daily in small doses for two or three weeks. 2. Simple diet; evening meal to consist only of thin porridge, gruel, or arrowroot. Koumiss; champagne, ½ hour before a meal. 3. Where relief from nausea only obtained after complete evacuation, encourage latter by the sipping of warm water. 4. Absolute recumbency in severe cases. 5. Drugs: Effervescing mixtures, salicin emulsion, phenyl salicylate, compound tincture of cardomom in dram doses, antipyrin or acetanilide with sodium bromide, small chloral and potassium bromide enemata, wine of ipecac in hourly minim doses; validol found most effective drug; menthol, 1 part in 60 of water, with 30 parts of alcohol or brandy, or chloroform (3 to 6 drops on sugar or in water) sometimes useful. 6. Rectal feeding, gastric lavage, laudanum stupes on epigastrium, ether spray, blistering of cervical spine, and ice-bags exert partly psychical effect. 7. Mental therapeutics, in purely neurotic type of vomiting. 8. Massage, electricity, blisters, etc., may help. *Hall.* 119

Whooping-cough. DIAGNOSIS. Edema of the eyelids, especially the lower lids, sometimes appears before the cough and may be of assistance in the diagnosis. *Thursfield.* 97

Wounds. TREATMENT. Nuclein solution found useful to ward off infection in cases of crushed and lacerated hands, burns, varicose ulcers, minor cuts, etc. *Achard and Redfield.* 105

Sodium perborate found useful as a dressing in infected wounds and acute or chronic ulcers. *Herzfeld.* 167

Solution of aluminum acetate recommended for dressing of infected wounds. Made with aluminum sulphate and acetic acid, of each, 300 Gm.; calcium carbonate, 130 Gm.; distilled water, 1000 c.c. For use, dilute with distilled water, 1 to 7 or 10. *Stansbury.* 227

ANNOUNCEMENT.

AMERICAN PROCTOLOGIC SOCIETY.—The annual meeting of this Society will be held at Atlantic City, New Jersey, on June 3 and 4, 1912. The headquarters and place of meeting will be the Hotel Chalfonte. In the preliminary program are announced 23 papers from the pen of experts in this branch of medicine, including J. L. Jelks, S. T. Earle, A. J. Zobel, J. P. Tuttle, J. M. Lynch, C. F. Martin, D. H. Murray, S. G. Gant, F. C. Yeomans, L. J. Hirschman, T. C. Hill, J. C. Brick, and others equally well known. The profession is cordially invited to attend the meetings.

Book Reviews

DISEASES OF THE EAR, NOSE, AND THROAT, Medical and Surgical. By Wendell Christopher Phillips, M.D., Professor of Otology in the New York Post-Graduate Medical School and Hospital; Surgeon to the Manhattan Eye, Ear, and Throat Hospital; Fellow of the American Laryngological, Rhinological, and Otological Society; Fellow of the American Otological Society; Fellow of the American Academy of Ophthalmology and Otolaryngology; Attending Otologist to the Post-Graduate Hospital and Babies' Wards; President of the Medical Society of the State of New York, etc. Octavo of 874 Pages, with 545 Half-tone and other Text Engravings, including 31 Full-page Plates. Philadelphia: F. A. Davis Company, 1911. Cloth, $6.00, net; Half-morocco, $7.50, net.

Notwithstanding the existence of a number of textbooks on diseases of the ear, nose, and throat which have long been recognized as foremost on these special subjects, the author has acceded to the repeated requests of his former students and those whom he has been privileged to instruct, and has produced a work which can be classed with the best. He

has exercised unusual care in the selection of material, and in the preparation of the manuscript has devoted much attention to the needs of the general practitioner and surgeon, as well as of the otologist and laryngologist. Contrary to the arrangement of the subject-matter seen in the majority of textbooks, the ear is first considered, in order to place particular emphasis upon the importance of this organ and to indicate the completeness of the section devoted thereto. The part pertaining to the nose and throat is equally as comprehensive and as thorough in its detail.

Probably the most distinguishing feature of the whole book, especially to the general practitioner, is the careful consideration of the influence of general diseases upon the ear, nose, and throat. The description of paracentesis is clear and comprehensive, and is likewise of importance to the medical man, who is frequently called upon to give immediate relief in acute conditions, and, in order to do so, must resort to surgical interference. The Hiss leucocyte extract is mentioned as being of benefit in certain purulent affections arising in the ear and nose. A subject seldom considered or even thought of in ear, nose, and throat books is that of lumbar puncture. The technique is here found tersely and clearly described, and the value of this procedure as a therapeutic measure indicated. The importance of blood examinations in ear conditions is also pointed out as being significant. The external ear is given ample consideration, and suggestions for the correction of various deformities are made. The description of ossiculectomy is greatly augmented by several very instructive illustrations.

In describing the simple mastoid operation, the author states that he considers the secondary incision unnecessary except in a few instances—in lateral sinus involvement or similar complication. It is rarely called for, he asserts, in children, and in adults is of advantage in less than 50 per cent. of cases. The writer justly condemns the indiscriminate use of the mallet and chisel in mastoid surgery on account of the shock produced, and indicates his preference for the curette or the various forms of rongeur forceps. He also advises against the use of the blood-clot method of obliterating the exenterated mastoid, stating that the results produced have not warranted its general employment.

The various dangers and accidents attending the radical mastoid operation are carefully enumerated. The relief of facial palsy by nerve anastomosis is clearly described. The chapter on labyrinthine affections appears to have been written with much care, and the description of the various tests and operations is accompanied by numerous well-executed illustrations, although some appear rather complex and difficult to understand.

Many of the drawings are original and have been carefully selected to illustrate the text. The book itself can be highly recommended and will no doubt receive the encouragement of the entire profession.—R. B. S.

Health for Young and Old. Its Principles and Practice. By A. T. Schofield, M.D., M.R.C.S., etc. New York and London: G. P. Putnam's Sons. The Knickerbocker Press, 1911.

Personal hygiene is a subject worthy of far more attention than is ordinarily accorded it by physicians, and, so far as the reviewer knows, there is not one satisfactory work on the subject. There are numberless little books covering much the same ground as does the one before us, and in much the same way; there are many better ones and a few worse. It would be interesting to know what particular qualification the writer has to speak with authority, for it is essential that anyone attempting to treat so grave a subject should exhibit the highest qualifications for his task.—J. M. T.

New and Non-official Remedies. Cloth, $0.50; Paper, $0.25. Pp. 298. Chicago: American Medical Association, 1912.

This little volume contains concise descriptions and a statement of the actions and uses of all drugs which have been examined and accepted by the Council on Pharmacy and Chemistry prior to January 1, 1912, for inclusion in the list of New and Non-official Remedies. The work of the Council, during the seven years of its existence, and the reports of the propaganda department of the Association Journal have sought, and in a measure succeeded, in convincing the practising physician that he must be more careful than has hitherto been the case in the selection of proprietary remedies for administration to his patients. It cannot be too strongly emphasized that, before prescribing any proprietary, the physician should inform himself of its exact nature and composition. For reliable information concerning the useful new remedies, both physicians and pharmacists will find this book extremely helpful.

HEALTH AND MEDICAL INSPECTION OF SCHOOL CHILDREN. By Walter S. Cornell, M.D., Director of Medical Inspection of Public Schools, Philadelphia; Lecturer on Child Hygiene, University of Pennsylvania; Director of Division of Medical Research, New Jersey Training School for the Feeble-minded, etc. Pp. 614, with 200 Illustrations. Philadelphia: F. A. Davis Company, 1912. Cloth, $3.00, net.

Dr. Cornell has presented a book so full of valuable findings, shrewd opinions, and wise recommendations as to meet the description of a unique production. There are a few other books designed to cover this new and deeply important department of human economics, but none of them are comparable to this as a guide to medical inspectors, to clinicians (for whom it will prove a mine of information and suggestions), to school boards, and also to all intelligent parents. The author says in the preface:—

"Today educators and social workers receive instruction in health matters as an essential part of their training. Municipal authorities are endeavoring to reach parents by school inspection, by visiting nurses, and by public lectures and exhibits. Physicians, heretofore blind or curiously indifferent to the diseases and defects found in children past the period of infancy, have been awakened by medical inspection in the schools. The revelation that defects of the eye, the nose and throat, the teeth, and the mind may profoundly influence the general health of the individual bids fair to break down the artificial barriers which have been raised between the so-called specialties and general medicine.

"The aim of this book is to present a practical exposition of the work of medical inspection, born of the examination of some 35,000 children, and to give to physicians and teachers a survey of medical practice as it relates to children of school age."

To form a fair concept of the scope and character of the work the following outline may serve:—

1. The three parts, Medical Inspection, School Hygiene, and Diseases and Defects, present a well-balanced consideration of the whole subject.

2. The work is eminently suitable as a textbook because of the unity of plan and purpose evident throughout. "A primary division has been made into parts and chapters. In those of the latter which deal with physical defects a secondary sequence of (1) definition, (2) cause, (3) prevalence, (4) evidence and diagnosis, (5) results, and (6) treatment has been followed as much as possible, the object being to train the reader and to facilitate the finding of desired information."

3. The section on Medical Inspection covers the subject comprehensively, giving the best plan of procedure with comments on methods in use in various cities. This is a great advance over four or five other books on the subject, since they simply publish the blank forms used in the different cities, with very little discriminating comment.

4. The section on Hygiene furnishes accurate facts and recommendations on ventilation, so far as these are known, and treats of physical education briefly but comprehensively, so that the physician and the teacher may understand the scope of the physical instructor's work.

5. The chapter on Mental Deficiency is a presentation of the whole subject of feeble-mindedness and dullness in a space of one hundred pages and in a comprehensive form, free from technical language. The author acquired his skill for this particular chapter by his experience as director of medical research at the Training School for Feeble-minded Children at Vineland, N. J., and to his work as special examiner of deficient children in the Philadelphia public schools and the Philadelphia House of Detention.

6. The final chapter on the Prevalence of Defects and Diseases is a presentation of statistics which may be taken as a standard. In this chapter are quoted illuminating excerpts from official reports of such cities as New York, Philadelphia, London, Breslau, and Edinburgh; reports from various colleges and high schools, and reports of special investigations on the subjects of mental deficiency, nutrition, and nervous disorders.

In brief, this volume may be cordially and confidently recommended to a wide group of readers, who cannot fail to profit by its thoughtful perusal.—J. M. T.

CLINICAL DIAGNOSIS. A Manual of Laboratory Methods. By James Campbell Todd, Ph.B., M.D., Professor of Pathology in the University of Colorado. Second Edition, Revised and Enlarged. 12mo of 469 Pages, with 164 Text Illustrations and 13 Colored Plates. Philadelphia and London: W. B. Saunders Company, 1912. Cloth, $2.25, net.

This is a clearly and concisely written manual, designed for the student and practitioner, in which are considered the more simple and commonly useful chemical laboratory methods,

The illustrations are particularly numerous and good, practically all the microscopic objects mentioned, all apparatus not in general use, and many color reactions being pictured. In the second edition, besides the customary revision and the addition of new matter on subjects already treated in the first issue, the scope of the book has been somewhat enlarged. Included among the additions made are: the use of artificial light and the importance of numerical aperture in microscopic work; photomicrography with simple apparatus; the antiformin method for tubercle bacilli; detection and significance of albumin in the sputum; Tsuchiya's modification of Esbach's test; the formalin test for ammonia and Benedict's methods for sugar in urine; volume index of red blood-corpuscles; Wright and Kinnicutt's method of counting blood-platelets; Harlow's blood-stain; a simple technique for the diagnosis of typhoid fever by blood-cultures; the Wassermann reaction, and Frothingham's impression method in the diagnosis of rabies. The chapter on Animal Parasites has been rewritten and doubled in extent, while two new chapters have been added, one upon Bacteriological Methods and one upon the Preparation and Use of Vaccines, including the therapeutic and diagnostic use of tuberculin. The work ends with an appendix on apparatus, reagents and stains, weight and measure equivalents, etc. Thus revised, the work is all that can be desired as a simple, practical handbook on diagnostic laboratory methods.

MAKERS OF MAN. A Study of Human Initiative. By Charles J. Whitby, M.D. (Cantab.), Author of "The Logic of Human Character," "The Wisdom of Plotinus," etc. Octavo of 424 Pages, with 47 Half-tone and other Plates. New York: Rebman Company, 1911. Cloth, $3.00.

This is a most unusual book. The author's theme is, in his own words, "the experiment of dealing with the lives of great men as problems capable, through and through, of psychological treatment and elucidation." With the lives of forty world-famous individuals as his source of material, he traces out in each the factors in heredity, personal proclivities, and environment which made of these men what they were. Interwoven with the whole are countless interesting details of a biographical nature, which serve to relieve the severity of the argumentation and render the book so attractive that when once taken up it is not easily laid down. The series of great men considered is divided into four types: 1. Men of action. 2. Esthetic type. 3. Intellectual type. 4. Ethicoreligious type. All are discussed and analyzed from various standpoints, the nature of which will readily be seen from the following chapter headings: "Family History, Parentage, Constitution"; "Physical Characteristics"; "Natural Vocation"; "The Natural History of Purpose"; "Power in the Crucible"; "Individuality: Its Nature and Power." Among the celebrities whose character and personality are dissected by the author are such men as Charlemagne, Lincoln, William the Silent, Leonardo da Vinci, Goethe, Scott, Flaubert, Titian, Cromwell, Cesar, Napoleon, Galileo, Leibnitz, Hegel, Newton, Harvey, Darwin, Spinoza, Bacon, Descartes, Kant, and Renan.

In the concluding section the author pleads for "the supremacy of the teleological as opposed to the dynamic point of view in approaching the problem of human nature." Regarding great men of the future, he believes that they will commonly lend themselves less satisfactorily to classification than those of past ages. The new type of greatness suggested by such men as Whitman, Tolstoy, Wagner, Nietzsche, etc., is hardly classifiable as either practical, esthetic, intellectual, or ethicoreligious. It combines all these attributes with something beyond which the author thinks is best designated by the word "personality." On the whole, this is a very suggestive and even captivating work, which none will regret reading, not once, but several times.

The General Field

Conducted by A. G. CRANDALL

Overwork

Nearly everybody is working himself to death according to a recent writer in the Medical Record.

This is an age of luxury. Our forefathers expected to work about all the time there was, snatching a few hours in the middle of the night for sleep. Some of them fell by the wayside, but a large number lived to a green old age.

Our foremothers had large families, manufactured their own cloth, made their children's clothes, and kept quite busy at it. A large number of these overworked women lived to tell the story of their early privations to their great grandchildren.

The person who works fourteen hours a day has little time for introspection.

There is no doubt that a large number of people are steadily overworked at present, but it is not because of the real, necessary honest labor they perform. It is the attention to unnecessary details and the keeping up of a superficial and unnecessary standard of living. Social heart-burnings are often more serious than the other forms of heart-burn.

Leisure has its advantages, but it also has many disadvantages. A great number of people are more content if they don't have an opportunity to turn the flashlight of introspection upon their mental and physical machinery. It is a well-known fact that a horse will continue to perform its allotted work for quite a period of time after it has ceased to lie down to rest at night. The horse instinctively feels that if it lies down it will be incapable of getting up. Nevertheless, it is able to report for duty each morning.

If the human machine moves on an even course and is not subject to undue friction and too many jars, it will be a long time wearing out.

Dietetic Ignorance

"The bad live to eat and drink,
But the good eat and drink to live."
—*Socrates.*

The moral of the above is that it is desirable that people eat and drink from the calorie standpoint, irrespective of the pleasures incidentally associated.

Evidently a large number of people, from the Socrates standpoint, are good. Witness the throngs entering the cheap restaurants in every large city. They certainly must go there for conscientious purposes rather than for pleasure.

Beautifully appropriate along the lines of this philosophy is the oft-quoted theory that "the good die young."

Speaking seriously, the appalling ignorance of dietetics which prevails among otherwise intelligent people is a sad commentary on our boasted civilization. The infant pronounced physically perfect at birth is in a large percentage of cases deprived at a very early age of his natural nourishment. From that time on life is a battle.

Granted that the child robbed of its normal sustenance, through the physical defects or, more likely, moral defects of his female parent, is able safely to escape the perils of babyhood, he then begins to run the gauntlet of cheap candies, chewing gum, and the delicacies offered to him by Greek vendors, who, like other Greeks of ancient days, come bearing "gifts"—of assorted microbes. The wonder of it all is that in a large number

of instances he seems to continue to exist.

It is not surprising that only a very small percentage of young men 18 to 20 years old can pass the physical tests of the U. S. Army.

If 10 per cent. of the time which is devoted to attempts to teach drawing to children who have not the slightest talent in that direction, or in imparting a knowledge of higher mathematics to pupils who have not yet mastered the intricacies of mental arithmetic, could be bestowed upon some of the simpler problems of dietetics and nutrition, it would be worth about 1000 per cent. more to the pupil.

Humane Slaughtering Methods

The statements made by physiologists that, under the influence of extreme agitation, certain vital organs of the animal organism produce a toxic secretion calculated to affect unfavorably the food value of the meat indicate that the large packing houses are entitled to great credit in their peaceful method of slaughtering animals. It is the custom to unload cattle which come in cars and allow them a few days' rest before being slaughtered; they are then put to death without being frightened, and altogether there is little doubt that meats thus prepared for the market are as free from toxic substances as could be expected.

Unfortunately the market customs with reference to poultry and the smaller animals are not so commendable. Poultry is apt to be brought into the market so crated as to produce great discomfort, and there is little opportunity for the fowls to be so placed before being slaughtered as to produce any rest or feeling of comfort and complacency. It is not surprising, therefore, that a great deal of illness results from eating poultry and also veal which represent more or less continuous existence for some days under circumstances calculated to produce great discomposure on the part of the fowl or animal intended for slaughter.

It evidently pays to be humane, and the custom prevalent among cannibals of feeding intended victims on the fat of the land, incidentally mixing in certain vegetable compounds intended to relieve them of all mental activity, was highly scientific.

Stale Food Products

Legislatures have shown remarkable industry and ingenuity in advising regulations for safeguarding the public against errors made through the carelessness of retail druggists. Every poisonous substance is expected to be so plainly labeled that it cannot possibly be mistaken for something harmless.

This is, of course, only legitimate, although it is a little bit fatiguing at times to keep up with the innovations and new styles of regulations.

There are various dealers in food products subject to the regulations of interstate commerce which should receive greater attention by the indefatigable lawgiver. Certain brands of stale butter might well have the skull-and-crossbones label conspicuously attached. The West Shore Railroad recently had in its possession at New York 30,000 pounds of antique butter kindly passed along to the inhabitants of New York from Chicago.

In this refined age it is no longer the custom to express disapproval of a theatrical performance by hurling bad eggs at the performers, but, if such a custom did prevail and even if eggs were utilized on all the many suitable occasions, it would not begin to exhaust the supply of this article of commerce, which,

however unartistic it may be, is far more suitable for decorative purposes than to be eaten.

The Problem of Nitrogen

Some great savant, who can also tell stories, possibly H. G. Wells, has melodramatically described the results of the too extensive commercial uses of atmospheric nitrogen. The consequences, according to the romance, were very serious.

And yet, it is probable that in the very near future there will be enormous demands made upon the atmospheric nitrogen in the furtherance of agricultural science. If a farmer can raise alfalfa and get part of his fertilizer from the atmosphere, why should he raise timothy, which makes no extraction from the atmosphere? If a farmer raises sugar beets to feed his cattle he must put back into the soil all that he takes out, but if he raises cow peas for his herd he is cashing a good-sized draft on the atmosphere for his nitrogen instead of paying hard cash for commercial fertilizers for his beet crop.

Now, this raises a very important question: if capital begins actually to recognize the possibilities, we will soon see a spectacle of the cornering of the commercial atmospheric nitrogen. Granted that a few million acres are devoted to the raising of alfalfa, and other millions of acres to the production of other legumes, all brought about by the cupidity of man, how long will it be before a congressional investigation will be necessary to find out who is cornering the atmosphere so that the common people can't breathe?

It looks as if the honest farmer was well worth watching and watching carefully. The possibility of agricultural graft seems to be boundless. A farmer trust designed to secure practically all their fertilizing capital from the atmosphere will make the steel trust look small indeed, as, while the latter is supposed to have successfully manipulated a large amount of water in various enterprises, they have left the atmospheric nitrogen entirely alone, only utilizing such warm atmosphere as they needed to promote their various enterprises.

The Tendency to Urbanism

A writer in the World Today for February compares present-day conditions with the situation in the Roman Empire, due to military success and consequent glory, which produced a distaste for agricultural life in any form whatsoever. Cities were thronged with artisans, dancers, actors, and people of leisure, and agriculture became distasteful to all.

The increasing difficulty in securing farm labor constantly being reported from all parts of the country, contrasted with the superfluity of help in the cities, forms an unpleasant parallel with events recorded by history.

Some means must be devised to check the tide of migration from the country districts to the cities, or the prevailing tendencies to socialism will become more and more apparent. The enormous circulation of many metropolitan newspapers might naturally suggest a means of making these disquieting facts more widely known, but the average editorial attitude of the daily newspaper is calculated to produce just the opposite effect.

Neglected Natural Advantages

Whenever there is an impending strike in the hard-coal districts, information is passed out in all directions that the anthracite supply is nearly exhausted.

Notwithstanding the probability that this statement may be handed out for effect, there is probably little doubt that

the price of hard coal is likely to advance, as it costs more and more to get it. Nevertheless, enormous fortunes are being made by the hard-coal roads carrying the anthracite long distances for use where substitutes should with reasonable care and judgment in investment be procurable at a much lower figure.

Enormous quantities of hard coal are used for power in factories which should be supplied through the medium of the power dam. While the initial cost is high, there is every reason to believe that the investment in the power dam is practically permanent, and, when we consider the enormous consumption of coal in regions where water power is easily available, it somehow does not seem consistent with good judgment.

This unnecessary waste of natural resources should be checked so far as possible. In almost every other country on the globe, there seems to be some consideration for future generations.

Little Learned by Experience

It is now confidently expected by all who are likely to cross the Atlantic that, as a benefit resulting from the Titanic disaster, captains will take no chances after this.

This is a vain hope. The human nature yet engaged in navigation is the same human nature that went down into a thousand fathoms of salt water with the Titanic.

Every few days, readers of newspapers are told of some shocking automobile accident, due in almost every instance to recklessness. It might be naturally expected that the news service which makes the details of these accidents known far and wide would have some effect upon such disasters, but such does not seem to be the case.

No one can be on the watch every minute. Everyone must get off their guard once in a while, and once in a while chance gets its work in at the unguarded moment.

The man who was subject to accidents and who concluded as a means of safety to stay indoors was killed by the loss of equilibrium of his grandfather's clock.

Politician vs. Statesman

The late Hon. Thos. B. Reed is said to have remarked that a statesman is a dead politician. Jackson, Lincoln, Cleveland, and McKinley were all bitterly assailed as self-seeking politicians while living, and all passed into history as bright and shining examples of American statesmanship.

It is a great pity that a politician could not be regarded as a statesman a little while before his untimely end. It would be a relief to a large number of people to be able to read in the current miscellany of the day that so and so was a real statesman.

Alas, few of us are ever likely to have such felicity. As long as the great statesman is able to keep the breath of life within his physical body, he will be a self-seeking politician entitled to all the abuse which the indefatigable purveyor of news matter can invent. The moment he passes off the stage of earth's activity and is thereby unable to furnish material for any more copy, his memory is promptly idealized and he becomes one of the nation's great ornaments—the dead statesman.

If it were possible, it would be most gratifying to a great number of more or less enlightened citizens to have a few living examples of statesmanship that they could point to and talk to their children about, but such a possibility seems very remote.

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Original Articles

THE RELATION OF DISEASES OF THE UPPER RESPIRATORY TRACT AND GENERAL SYSTEMIC CONDITIONS.*

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THE scope of the topic assigned necessarily renders it impossible for me to cover *specially* the subject of the conditions of the upper respiratory tract—70 per cent. of which are systemic conditions—treated by the specialist. I purposely use the word "conditions" for this reason, viz., that if I am to cover the diseases of the upper respiratory tract, 70 per cent. of which are not local, it will be impossible in the space of time necessarily allotted to this paper, to "individualize" these diseases and conditions. I shall limit my remarks, then, to the peculiar cases.

In the first place, by the term "upper respiratory tract" we understand the nasal cavities, the nasopharynx, the pharynx, the larynx, the bronchial tubes, and the pulmonary tissue.

This tract of mucous membrane is not a separate and distinct part of our anatomy and physiology. If it were a separate and distinct part, then it would be independent. Of all the tissues and parts of the human anatomy there is none less independent than the mucous membrane. It is a dependent structure and cannot exist without connective-tissue framework. The mucous membrane consists of its basement membrane, which has its connective tissue and epithelial layer, both embryonic. Below this layer we have the lymphatics, blood-vessels, nerves, and secreting glands. Above it we have the genetic layer of the epithelial cells and the epithelial cells proper. The mucous membrane is in reality, especially the pharyngeal part of it, a barometer to the general system. In other words, any interference with circulation or innervation, or any organic disturbances, very quickly affect the physiological function of this tissue.

* Read before the Philadelphia County Medical Society, Jan. 10, 1912.

If we stop to think of our anatomy and physiology we observe at once that this tissue is only supported on one side; in other words, it is hung on the bony and cartilaginous wall of the cavities. Any interference with its physiological function is necessarily manifested on the surface which bounds the lumen of the cavity. For that reason I make the statement that 70 per cent. of the conditions involving this membrane are not local, but due to systemic conditions or diseases, and are local manifestations of systemic conditions. As an illustration: If an individual has a mitral lesion of the heart, no matter how slight, the return circulation is interfered with and necessarily the lax tissues, namely, the mucous membrane, are the first to suffer. There is nothing wrong with the mucous membrane, but the condition is forced on it. Now, if the disease, which is not situated in the mucous membrane, is not arrested, and if the interference with the physiological function of the membrane is continued, it will in time produce a local lesion of that membrane, although originally the membrane was not at fault. This can be illustrated in many other ways. Thus, if an individual wakes up in the morning with a gouty or rheumatic toe, it is not a disease of the toe, but simply a local manifestation of a systemic condition, and every practitioner of medicine knows that local treatment will not cure the gouty or rheumatic toe. In that structure we have a synovial membrane and the structure is backed up by firm connective tissue. How much more readily, then, in this mucous membrane, which is hung on the surface, will we have local manifestations of a systemic condition!

The lymphatic system of the pharynx and adjacent structures, as described by Poirier, Cunéo, and Delamere, shows what a wonderful barometer this structure is to the individual. Each individual lymphatic system bears its own significance. The wonderful part of this lymphatic system is that it secretes, excretes, and absorbs, all depending upon the underlying pathological alteration and the exciting etiological factor. As illustrating these peculiar lymphatic areas, let us take, for example, the infections involving the adenoid tissue in the nasopharynx. We all know that the chain of lymphatics back of the sternocleidomastoid muscle will be involved. If the infection comes from the tonsillar ring, the chain of glands anterior to the sternocleidomastoid muscle will be involved. On the other hand, if the lateral pharyngeal chain of lymphatics is affected, the irritation invariably comes from the stomach or intestinal tract.

Every practitioner of medicine who is a close observer knows that "individual" types of individua's will always show a variation from the general rule, and it is through his power of deduction and observation that he is enabled to make the proper diagnosis and prognosis in individual cases. The so-called specialist must be a general practitioner. If he is not, he is not worthy of the name of specialist. For example, a patient is referred to the specialist for some irritative cough. Cough in itself is a symptom, and, while, locally, it is laryngeal or pharyngeal, the causal factor may be foreign to these structures. Because the patient has a cough it is a wrong deduction to assume that he needs a cough medicine. There is a rum cough: The cough may come

from a heart lesion, due to damming back of the blood on a lax structure. Cough medicine and local applications would do no good,—indeed, would do harm. If the individual has an enlarged liver or spleen, it will press against the diaphragm and cause a spasmodic cough. Pleuritic adhesions will do the same, and yet the individual from the continuous coughing may show irritation of the mucous membrane. Local treatment may alleviate, but never cure.

Any lesion of the heart, lungs, pleura, liver, spleen, or intestinal tract; any autoinfection or intoxication, or a chemical change in the secretion, may be the underlying cause of the local irritation of this mucous membrane, and since this membrane is extremely sensitive, both from its terminal nerve filaments and from its lymphatic supply, it thus becomes a barometer to the general systemic condition and the observing practitioner must determine the underlying cause. If the condition be due to an engorged liver, cough may be cured by a dose of calomel, whereas all local treatment and cough medicine would be of no avail.

The causes of cough are innumerable. An adherent tonsil and an imbedded tonsil may constitute the pharyngeal irritation causing the cough. Owing to the peculiar distribution of the pneumogastric nerve I have seen an ear condition keep up a continuous, irritating, racking cough. One marked example of this was in an individual, 35 years old, who had developed an irritating, rasping cough which kept up day and night and could not be controlled by narcotics. The mucous membrane of his pharynx and larynx was exceedingly inflamed and congested from the continuous coughing. He was losing weight and his general health was below par. It had been intimated to him that he had tuberculosis, but no one could find the tubercle bacilli in his sputum. The actual cause of his cough was found in his external auditory canal, which was smaller at the external orifice than within. There had accumulated within the canal a ball of wax. He was one of those individuals having the peculiar distribution of the nerve which every one of us has seen,—of this I am myself an example,—in whom even the slightest irritation in the canal will produce coughing. After the ball of wax was removed his cough disappeared in less than ten days.

Inflammatory conditions of the upper respiratory tract invariably increase secretion, and the attendant congestion of the nasal mucous membrane interferes with respiration. This, then, causes what is commonly known as a *catarrhal* discharge, this word "catarrh" being used in a very loose manner. The discharge or excess of secretion is either caused by interference with aëration or results from stimulation of the glands or inflammation. It is the duty of the physician, then, to find the underlying cause, and to do this he must necessarily take into consideration the age of the patient, his habits, his occupation, and his mode of life,—under this would be included nerve tension, worry, mental strain, shock, sadness, or any form of nervous excitement.

With regard to age, we must recognize in the young the age of puberty. The young girl, before the menstrual period begins, has turgescence of the nasal mucous membrane. The lad entering the age of puberty has the same turgescence. This will cause an obstruction of the nasal passages, which is

purely physiological. Is it rational, is it sensible, is it right, to destroy this membrane under these conditions to establish breathing when, in the course of time, the physiological function will become readjusted, and the nasal mucous membrane will take care of itself? To be sure, by the removal of the turbinal free nasal breathing can be established, but by doing so there will have been removed a physiological structure that is needed in that very passage. The nose is more than a hole in the face, and every bit of mucous membrane is needed in the performance of the physiological function of this organ. The injudicious removal of the turbinal at the period mentioned will cause the individual in adult life the greatest amount of annoyance, and result in lesions of this membrane which cannot be relieved by treatment.

The nose is strictly an air passage, and is not intended for fluids. Indiscriminate removal of tissue cannot but interfere with the function of this air passage. In the passage of fluids through the nose by means of douches, sprays, etc., these fluids necessarily come in contact with the healthy tissues as well as the diseased, an inflammatory condition being produced in many instances.

Going further, during the period known as the menopause, there is always turgescence of the mucous membrane,—a purely physiological function,—and it is necessary for all of us to recognize the difference between a purely *physiological function* and a *diseased condition*. It is just as important to be able to recognize a local lesion in this membrane which is dependent upon a systemic condition as it is to recognize a lesion that is purely local.

One of the factors which is frequently neglected is a sympathetic type of nervous system. We can all recall how in our childhood, when vexed and too proud to cry, we had a lump in our throat. If a patient told us that, we would probably call it "globus hystericus." If we tried to swallow we were convinced that we had a lump in our throat. The real facts in the case are these: Owing to the mental strain the lymphatics of the throat area are instantly blocked and that area becomes perfectly dry, giving the sensation of a lump in the throat. The relief of the mental strain at once relaxes the lymphatics and the lump disappears. From shock, worry, and sadness I have observed the same condition affecting the ear, instant deafness being brought on, which was only relieved by the relief of the mental strain. For this reason, I repeat, this sympathetic type of nervous system should be recognized in our diagnosis and prognosis. Of what avail would local treatment be for the vexatious lump in the throat?

Another interesting class of local lesions of the mucous membrane under consideration may be classed as *chemical*. For example, we frequently see patients who, overnight, have developed a series of ulcers on the tongue, buccal membrane, pharynx, and soft palate,—clear-cut, well-defined ulcers, involving liquefaction necrosis. These are purely chemical.

It is a well-known fact that mental strain, anxiety, worry, shock, sadness, etc., will alter the secretions of the various glandular organs. When any excitement occurs in the midst of a meal, one regularly finds after the excitement has subsided that digestion stopped just where the excitement began.

In other words, the chemistry of the secretions has been altered and the physiological function arrested.

For a number of years I have made a special study of the salivary and pharyngeal secretions in relation to disease, and my deductions have been as follows: In the first place, as is well known, the various glandular structures all derive their nutrition from the blood. Each gland, in turn, supplies its secretion to perform a physiological function. The saliva is the only physiological secretion which comes to the surface, is exposed to air and moisture, and returns to perform a physiological function. The secretion and excretion coming from the kidney and intestinal tract merely carry off the waste products.

There are three kinds of saliva from the standpoint of diagnosis: the excessively alkaline, the excessively acid, and the neutral. The significance of each is controlled by various combinations. For example, an excessively alkaline saliva, containing sulphocyanides, is exceedingly irritating and poisonous, yet if the alkalinity is ammoniacal it differs from the sodium alkalinity with sulphocyanides. All cyanide combinations are poisonous, and I have seen a number of individuals in whom such combinations existed, and who presented all the symptoms of autoinfection or intoxication, just as marked as were ever exhibited from an intestinal autoinfection or intoxication. I have seen saliva so markedly ammoniacal that in the chemical study there was eliminated free ammonia. In such cases the mucous membrane in the entire upper respiratory tract showed marked irritation, the patient exhibiting a hacking, irritating cough, and the mucous membranes being inflamed and usually presenting a glazed appearance. The general condition was poor, there was indigestion, loss of weight, etc., while the gums showed a state of recession, excessive sensitiveness, and continuous bleeding, usually pronounced Riggs's disease. Change these alkaline secretions suddenly from an ammoniacal to a potassium alkalinity, and the symptoms vanish as if by magic. Of course, this is not a cure,—that can only be obtained by a chemical study of the secretion.

The ammonia cases in some instances show symptoms almost identical with rheumatism. I believe, personally, that we have in these excessively ammoniacal cases an alkaline rheumatism just as certainly as we have an acid rheumatism. In the uric acid cases the teeth always show an involvement from within, with cracking and deposition, while in the ammoniacal and alkaline cases this does not appear; there is only recession of the gums and the exposed part of the tooth shows no change whatever.

The conditions known as hay fever, ragweed fever, horse fever, rye fever, rose cold, etc., are illustrated in many ways. There is another similar condition, not dependent upon pollen, in which the individual, not exposed to any external influence whatsoever, but sitting comfortably beside his fireside, suddenly develops a cold in the head. This is lithemic and comes from within, not from without. All these conditions can be classed as answering to the following general description:—

There is an irritant in the secretion, which comes to the surface and acts *per se* as an irritant to the membrane, or which, when coming to the surface,

unites with some extraneous material to produce an irritant; or again, which, when exposed to air and moisture, leads to the formation of an irritant through the resulting chemical change.

A study, then, of the secretions will enable the practitioner to determine the irritant active in the individual case, as well as the treatment required.

Some maintain that these conditions are neurotic. There is no question but that some individuals having these conditions are neurotic, but we have all observed similar states in individuals who are not neurotic. Again, let us take, for example, the so-called "horse fever." In every case the individual has an excess of ammonia in his secretions, and his membrane is very susceptible to this form of irritation. The failure of elimination on the part of the various organs will invariably affect the salivary secretion, and by a careful study of the organic chemistry of the saliva one can determine the original source of the irritation.

The fact that the salivary secretion may be poisonous is illustrated in that even before we had governmental laws, in the time when only tribal laws existed, biting was a serious offense, it being known that the bite of certain individuals was poisonous. Such individuals were always referred to as the "blue gums." In every case in which the salivary secretion contains sulphocyanides in any percentage the gums of that individual are blue, and I have seen several cases in which the amount of sulphocyanides present was so great that 5 drops of the saliva caused the death of a guinea-pig in less than ten minutes. This shows why the bite of such an individual is poisonous, and also why the individual whose saliva contains sulphocyanides shows all the symptoms of autopoisoning, notwithstanding the fact that the gradual onset of the condition creates tolerance in him. Saliva devoid of sulphocyanides is not poisonous.

The treatment of these conditions is necessarily varied. The neutralizing and rendering of certain poisons insoluble, and the change of the secretion from a volatile, ammoniacal form of alkalinity to another form, are purely chemical alterations. Our therapeutic friends may say that we are not test-tubes. In reply, I shall remind them that neither are we guinea-pigs. But when an individual has a strongly ammoniacal saliva and he tells you that he cannot eat acids of any kind, such as grapefruit, strawberries, or even oranges, without producing urticaria, and you change the reaction from the ammoniacal to the potassium alkalinity, with the result that tolerance for acids is at once established, it seems reasonable to me that the drug administered is responsible for the change. All alkalies do not act alike. We use potash to make soap, and not sodium chloride, yet both are alkalies.

In conclusion, I desire to state that the above observations are true only in a certain class of cases. In many instances the salivary secretion gives us no such a valuable index, but in these cases the diagnosis can be reached in other ways, and it is to the particular cases in which the alteration of the chemistry of the saliva to which I have referred has taken place, that I urge your closest observation.

TREATMENT OF PSORIASIS.*

By ALBERT BERNHEIM, M.D.,

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As the title of this paper calls only for the treatment of psoriasis, I shall not devote time to a full discussion of its etiology. Whether psoriasis is an infection, a toxemia, or a neurotrophic disturbance does not matter for our present purposes. I would like, however, briefly to mention just a few points not in direct relation with the treatment of the disease:—

1. *Localization:* Extensor surfaces of extremities; head.

2. *Duration:* Atypical course; propensity to relapses.

3. *Hereditary influences:* Such cannot be denied, as there is frequently an evident predisposition to the disease in members of the same family.

4. *Character of the efflorescences:* Silver-gray scales, large lamellæ, on an easily bleeding substratum.

5. *Differential diagnosis:* Ready confusion with herpes squamosus, herpes (tinea) tonsurans, lues.

In the last nineteen years I have had under my observation 11 well-developed cases of universal psoriasis which I treated with most excellent results by the method about to be described. In a number of instances relapses did not occur at all; and where they did occur, they were of such small extent as to be almost negligible.

The patient is put into a warm bath (98° F.), to which, if the skin is tender and irritated, chamomile or bran and washing soda are added. The skin is rubbed slightly once or twice with soft soap (sapo viridis) and washed off. The scales are then readily removed. The patient is next washed with a solution of mercury bichloride (1:1000), and after this the skin is tarred with:—

℞ Olei rusci,
Olei fagi pinguis .....of each 20.0 (3v).
Alcoholis diluti ..... 10.0 (3iiss).
M. Sig.: Tar.

(The tar oils must be *fresh.*)

After the patient's skin has been well tarred, he remains in the bath for twenty to thirty minutes. After the bath the tar is washed off and the affected parts are treated with a paste of salicylic acid and sulphur:—

℞ Acidi salicylici ..... 1.0 (gr. xvj).
Sulphuris præcipitati ..... 4.0 (3j).
Zinci oxidi,
Amyli tritici .....of each 1.0 (gr. xvj).
Petrolati ..... 25.0 (3vj).
M. Fiat pasta. Sig.: Salicyl-sulphur paste.

* Read before the Lebanon Hospital Medical Society, November 23, 1911.

Talcum powder is then dusted thickly over the parts to which the paste has been applied.

No treatment is given for the next forty-eight hours. At the end of this time the following ointment is applied to the affected parts:—

℞ Pyrogallolis ..... 3.0 (gr. xlviij).
Adipis lanæ hydrosi ..... 30.0 (℥j).
M. Fiat unguentum.

Talcum powder is heavily dusted over.

After another two days' pause an ointment of

℞ Chrysarobini ..... 5.0 (gr. lxxx);
Adipis lanæ hydrosi ..... 20.0 (℥v);
M. Fiat unguentum.

is put on the affected parts, which are then dusted with powder. Chrysarobin occasionally causes a general dermatitis, and may bring about severe burning and itching; it may, therefore, become necessary to avoid applying the paste to all the affected parts at one time, but to cover them gradually.

In the treatment of psoriasis of the face we should avoid chrysarobin, and substitute another ointment having this formula:—

℞ Unguenti hydrargyri ammoniati,
Pyrogallolis .....of each 1.0 (gr. xvj).
Unguenti zinci benzoatis.....q. s. ad 25.0 (℥vj).
M.

Psoriasis of the scalp is best treated by washing with a 1:1000 solution of bichloride of mercury.

In addition to the local treatment, I prescribe for the patient two kinds of pills according to the formulæ:—

℞ Acidi carbolici crystallisati .....ā. 10.0 (℥iiss).
Ext. et pulv. glycyrrhizæ ..... q. s.
Fiant pilul. no. C.
Sig.: From 3 to 10 pills daily after meals.

And,

℞ Arseni trioxidi ..... 0.5 (gr. viij).
Pulveris piperis ..... 6.0 (℥iss).
Acaciæ ..... 1.5 (gr. xxiv).
Altheæ ..... 2.0 (gr. xxxij).
Aquæ destillatæ ..... q. s.
Fiant pilul. no. C.
Sig.: Increase from 1 to 8 or 10 pills daily.

As for hygiene, the patient should be required to take plenty of fresh air and rest; he should not tire or overexert himself in walking or any other exercise. The diet should be bland, consisting of articles such as milk; sweet, fresh butter; cereals, thoroughly cooked; green vegetables, thoroughly cooked and as purées; eggs, omelets; noodles, macaroni; custards, puddings of rice or

tapioca; soups made with rice flour, barley flour, lentil flour, stewed fruit, etc. Meat and alcohol should be avoided, at least for some time.

The use of the tar and ointment is ordered only for a short period, whereas the pills should be taken for a longer time.

THE MENTAL AND PHYSICAL PECULIARITIES OF THE HINDOO ASCETIC.

By FRÉDÉRIC S. MASON, M.D.,

NEW YORK, N. Y.

Before primitive man advanced in intelligence by cultivation of his reasoning powers, his mentality for countless generations must have been little higher than that of anthropoid apes.

Leaders of mankind, however, gradually developed objective minds, and by practical demonstration of the advantages to be derived from forethought forced their objectivity on the masses.

When man had progressed so far as to know good from evil, he found that, to prosper and satisfy his newly created desires, it became necessary to use reason, and to control the purely subjective. He now began to make provision for the morrow; but as the responsibilities of life grew apace, the Garden of Eden spirit of happiness was lost.

The subconscious mind, untrammelled by things material, considers especially that which is impracticable; it is the very essence of the so-called artistic temperament with its optimistic irresponsibility. Our childish faith and clinging to myths and unfounded opinions is of subjective origin, yet it is also the source of that inspiration which makes the poet, the artist, the inventor, the thinker, and all idealists, and is the incentive which, in the highly intelligent, makes ideals become realities and distinguishes the fortunate possessor.[1]

In order better to study the motives which prompt Hindoo ascetics to crush out their objective consciousness and live, as it were, within their subconscious selves, some introductory remarks are necessary. Primitive minds

[1] The writer is influenced by the usual view of the subconscious mind which regards it as an inferior kind of mind. That part of it may be inferior which is shared by the lower animals and by plants, which has to do with the beating of the heart, and to whose control we turn over the things that we learn to do by habit, as walking. A quite different kind of subconscious mind is that part which furnished the early Methodists and Quakers their "inner light," and to which the writer refers as the optimistic irresponsibility of the artistic temperament. It is hard to see how man could progress with intellect and logic alone, for it would seem that this optimistic irresponsibility is characteristic of most men who accomplish great things. The subconscious mind, for that matter, is not devoid of logic, for it sometimes solves difficult mathematical problems during sleep, and it is usually considered to be incapable alike of intentional and unintentional errors—*i.e.*, lies and mathematical mistakes. Perhaps while the yogis may exaggerate the importance of this subconscious mind, the western mind has, at least until recently, greatly underestimated it.

are found everywhere, and readily respond to suggestive influences from within or without, as every physician can testify. Being without inductive reasoning powers, these minds repeat what they have once accomplished, and come to conclusions, false or true, through imagination, imitation and deduction. The fully conscious mind is quite the reverse of this type, since it is undisturbed by theories, philosophies, doctrines, creeds and the superstitions created by the subconscious mind, whose mental content is subject to inductive reasoning.

In distant historic periods, man had time to speculate on natural phenomena, and beliefs were impressed on the ignorant masses by thinkers, which, accumulated and enforced through spectacular ritual and priestcraft, succeeding generations accepted without discussion.

Having progressed far above mere animals, men learned to hold their primitive instincts in check, the subconscious coming to the surface only in the so-called weak-minded, or under hypnotic suggestion, when conscious reason is obliterated and becomes subservient to the promptings of the subconscious. Personal contact with even the lowest types of man existing in Asia, Africa, South Africa, and the Pacific Islands leads me to believe, however, that the proportion of individuals in whom the subjective mind is preponderant, and who are therefore easily influenced by suggestion, is not greater in these types of men than among Europeans and Americans.

Suspension of the reasoning or objective mind may be brought about by autosuggestion and is exemplified in crystal gazers and Christian scientists, as well as in fanatical Mohammedan, Buddhist, Hindoo, Christian, and other believers. If this process be carried to its logical conclusion, we can hardly avoid the suspicion that faith in anything which cannot be proved or discussed on a reasonable hypothesis is a beginning which may lead to hypnotic suggestion.

In the use of intoxicants, which, for a time at least, makes us forget responsibilities, we have an example of the desire common to all races, civilized or uncivilized, to return to the unconscious, irresponsible state through temporary obliteration of the conscious objective mind. While this may be accomplished to some extent by hypnotics and narcotics, which paralyze the sensory avenues of information, certain mental exercises also produce hypnosis. This may be brought about by exhaustion of the neurons by persistent efforts or by a saturation of the peripheral ends with fatigue toxins, as suggested by Ramon y Cajal, and there is no doubt that yogi practices bring about a relative cerebral anemia affecting consciousness and leaving the subconscious mind hypersensitive to milder influences than those aroused by external stimulation.

It would be interesting to determine many physical changes in these devotees, such as blood-pressure, respiration, and the cardiac pulsations, but this would be very hard to obtain from sincere ascetics. I have noted a general lack of muscle tone, but have had no opportunity of making an autopsy, which might reveal many points of interest. In the yogi state, dreams appear so real that they may be compared with the hallucinations of the insane. The religious philosophy of the Hindoos has little to do with the separation of the

objective and subjective mentality, and I shall not refer to their beliefs, but endeavor to fathom the motives which prompt those who take on a yogi life of self-abnegation, often attended with much physical suffering. I am convinced that few of them are insincere, even among the anchorites and Mohammedan fakirs who frequent the melas, or country fairs, in India, and are those most commonly noticed by visitors because they air their sufferings and capacity to submit to pain. This is brought about by a determination which so affects their objective consciousness that the sensory nervous system appears to be entirely under control. Such fanatics may be compared, however, with our Christian martyrs who walked boldly to the stake, singing hymns and dying cheerfully for their conviction. The devotees who have recourse to extreme practices are drawn from the lower castes,—men in whom deductive reasoning powers preponderate. On the other hand, there are true yogis who are recruited from the higher castes of educated Hindoos. Many of these, in fact, have had a university education and speak good English. I have even met two who had studied medicine, and were familiar with our modern ideas on hypnotism, psychiatry, hallucinations, etc. Such men abandon civil life usually between the ages of 30 to 40, before the fires of passion have died out, and, with the approval of their wives and families, leave positions of comparative affluence and comfort for the ascetic life. They begin with meditation, isolation, and concentration of thought, then drift into that indifferent state in which the sensory avenues of information become dulled, and finally reach a condition which they call "illumination."

The anchorites reach a state of "illumination" by repetition of a mantram or mystic phrase, while submitting to all sorts of painful exercises. The yogi state may be therefore described as that mental condition which allows the subconscious mind to come to the surface, as it were, and limits conscious reasoning in those who have long practised it.

Both anchorites and true yogis reach the state of "illumination" by suppressing ambition and natural appetites. The object sought, however, differs: In the wretched anchorite, covered with dust, vermin, and a mass of matted locks, the initial stimulant has been the desire for material comfort, power, and wealth in some future birth.

These types of ascetics are generally Siva-worshipers drawn from a purely subjective stock, easily satisfied with one idea. They readily submit to autosuggestion and obtain mental content without utilizing inductive reasoning or conscious effort, and by abstracting themselves from all momentous questions of life, in spite of a severe physical stress on their nervous system do not suffer severe shock or become neurasthenic as would be the case in normal reasoning beings. Once these powers of "illumination" are obtained, they are easily repeated without much effort and become fixed in the mind as the state of beatitude. Speaking for the higher class of ascetics, it should be understood that their mental and psychophysical exercises are undertaken with the object of preparing their subconsciousness for further moral and intellectual advancement in future incarnations, so that in course of time they will become a part of universal consciousness or soul world and thus avoid the necessity of

rebirth. To such thinkers, life is one long succession of misery and lasts so long only as they fail, through ignorance, to rise above material things or realize their identity with universal consciousness. They desire no reincarnation,—their object is to reach "moksha," or cessation of rebirth, by complete "illumination."

The tendency among us is to hope for a realization of better things after death. The yogi denies that death makes so much difference. How can we learn by dying any more than by sleeping? We awake little wiser than we fell asleep. The yogi holds that it is only by dying during life that progress can be made, for he holds a change of bodies to be merely incidental.

By disassociation of the subconscious mind from the objective mind, the higher-grade yogis arrive at the conclusion that mind produces matter, and that all matter is "maya" (the illusion of material things). This "spirituality," as they call it, allows their subconscious mind to become part of the "divine essence" that pervades the entire universe. This view, conceived by the early Hindoo sages, may be in a measure compared with our modern conception of ether, the basic principle of all matter.

The higher-grade yogis (Brahmins or high-caste Hindoos) obtain illumination by various breathing exercises, pausing between inspiration and expiration, some by concentrating their minds on some subject; others, by twisting their tongues down their throats so as to cover partially the epiglottis, until, by practice, they are able to maintain this "suspended animation" for several minutes.

They have curious theories about "saving their breath" and by this means prolonging their lives indefinitely. This, however, while universally believed in India, must be taken *cum grano salis*. Many Hindoos have told me that such yogis live in this state of "suspended animation" for hundreds of years, and one positively stated that he had seen three such saints who have remained living for 1500, 2000, and nearly 3500 years.

Former criticisms of the various kinds of yogi were not unkind, but were superficial—as a Chinaman might be who tried to describe Methodists, Baptists, and Quakers each in half a dozen lines and mainly through contact with a few individuals who might not in their lives and practices represent truly the Methodist, Baptist, and Quaker faiths.

Baba Bharati, in his book entitled "Krishna," published in New York in 1904, gives a description of the various kinds of ascetics of which a brief abstract follows. According to this authority, there are five classes of Hindoo ascetics, and the practices employed to obtain Samadhi, or mental poise and discipline, are by:—

1. Jnan yoga—linking with the Godhead by concentration. They do not advocate breathing or other exercises, but rather plain living in isolated places free from temptation and material comforts. This introspection is nothing but concentration on some object by which they obtain self-hypnosis.

2. Karma yoga—the performance of duty without reward or selfish object. As in all the systems, the object is "moksha," or freedom from rebirth by realization of the human ego (Jibatman) as a part of the divine soul (Parat-

man). This form of hypnosis gives rise to a temporary realization of the soul identity (Samadhi). These yogis consider that to whatever station of life man is born, his duty is to himself, his family and society; that personal gain merely binds him to earth and delays reunion with the universal consciousness by rebirth.

3. Raja yoga—the arrest of thought; "turning thought inward," the Baba calls it, "toward one concentrated stream into the soul," by arresting respiration. The object is still "moksha." This they obtain by renunciation and control of the senses, living far from temptations; by breathing exercises, they secure a temporary suspended animation while concentrating on some object. This probably means a partial syncope resulting from control of the respiratory center so that the unexpired carbonic acid does not stimulate the phrenic nerves to activity. During this suspended animation, thought is concentrated on God, some object or word. "By this exercise," says the Baba, "we obtain five mental states, viz., Murha, Khipta, Vikhipta, Ekagra, and Samadhi," and the latter is reached by constant repetition of the breathing exercises, so that "the mind becomes fixed on one idea," and finally a trance or cataleptic state is reached, the "state of absolute absorption into the Deity." The Baba very wisely adds, however, that this process of obtaining beatitude is prohibited by the Shastras during this, the "iron age," as men have deteriorated in vitality since the "golden age." If attempted, "it should not be without the assistance of an adept yogi 'gooroo,' " and "those who attempt it usually die young or become insane," which seems very reasonable to believe.

4. Bhakti yoga (Vaishmavism).—This is based on the dualistic conception of the soul, universal consciousness (the God-soul) being the source of both. In their devotions, they fall into ecstatic fits during which they are said to be in "Sumadhi." This is the so-called religion of love. It represents "concentration upon some divine incarnation" by means of devotion, by the heart and not by practice and offerings. It is "the highest form obtained by meditation," and the one most adapted to an intelligent being.

5. Ghatastha yoga prescribes certain physical exercises and comprises a knowledge of anatomy and physiology, which is utilized in the treatment of diseases. Far from advocating a deadening of the senses, it advocates a higher development whereby greater and more refined enjoyment may be derived. It teaches how to control desires, furnishes a practical knowledge of the human mind and its psychology, and demonstrates the wisdom of the survival of the fittest.

Ghatastha yoga recognizes matter as eternal and all-pervading, mind and consciousness being merely peculiar manifestations of matter. This coincides with the old Vedantic philosophical conception of life. The method of obtaining "Samadhi" is by mental exercises; by fixing the eye on the tip of the nose and through extraordinary efforts of the abdominal muscles, by which the intestines are expelled through the rectum, washed, and returned to their normal position (a sort of voluntary intussusception).

The anchorites, or holy friars, who infest all towns and are known as ganyasis, gosai'ns, fakirs, sadhus, etc., are not true yogis, properly speaking.

They are religious mendicants moving about from place to place, and their object is selfish, viz., to obtain a mental state so fixed that at death they may be reincarnated in some family which will give them position, power, wealth, etc., and compensate them for the miserable life of the mendicant. Their point of view differs, therefore, entirely from Christian ascetics, who do not look for earthly reward. Nevertheless, the wandering friars of the middle ages would have been welcomed to their ranks, for Christ, according to them, was a great saint or Divine Incarnation. This also explains the tolerance of the Christian missionary and all teachers of the doctrine of abnegation and non-resistance in India.

Hindoo and Mohammedan anchorites abandon themselves to all sorts of physical tortures, such as sitting on spikes of iron, holding the arm in the air until it atrophies, gazing at the sun, swinging over hot coals; and I have frequently seen such fanatics at work in lonely spots far from the cities, so that there could be no doubt of their sincerity. These people are literally "dead to the world," yet they are a great corporation, with leaders who have wealth, great personal influence, and are often men of intelligence and authority. They meet in great numbers at country fairs and festivals and take part in notable religious observances.

These ascetics could do much mischief in India if they chose, by spreading sedition, and yet, strange as it may seem, they uphold the British Government and preach peace, order, and contentment under authority. Their attitude would probably change, however, if they were interfered with.

In their constant ramblings they carry news and ideas throughout the empire and know all the secrets of the people, who have immense confidence in their wisdom. The government very wisely interferes with them as little as possible.

They welcome the sanitary arrangements made for their benefit, and in recent years the epidemics of plague, cholera, and contagious diseases have much diminished at Hurdwar, Allahabad, Benares, Budda Gya, Puri, etc., where the people gather to meet these anchorites. That such ascetics have always been numerous in India is undoubted, for we read that the Greek philosophers Strabo, Megasthenes, and Arrian, the pupil of Epictetus, learned of their wisdom and goodness.

Having considered what is to be understood by yoga, let us see how it differs from the subconscious state in normal sleep. To my mind, the difference is not great.

In deep sleep the heart beats, breathing continues, the vasomotor, digestive, secretory, and other organs functionate through the impulse of the sympathetic nervous ganglia, and the subconscious mentality is active. Yogi concentration, therefore, may be compared with normal sleep, for, while sensory stimuli do not appear to reach the conscious cerebral centers of these individuals, memories of the smallest incidents are ever present, and are concerned in vision, audition, etc. Their condition, however, must not be compared with fleeting dreams of normal individuals whose central nervous system is partially aroused by previous nervous excitement, irritation within the gastro-intestinal tract, or through tactile and other special sense organs.

In normal sleep, only the centers of reasoning consciousness really sleep, *i.e.*, that part of the higher psychic frontal lobes in which we realize self-consciousness of the ego. We know that in such cases as narcolepsy, cataplexy, etc., there is a dislocation of the conscious and subconscious minds; we also know that any monotonous work will rapidly tire out attention, and this fact is utilized by professional hypnotists to produce an hypnotic state of sleep of a kind which, however, is impossible in the hysterical and insane. The psychic yogi state, therefore, may be considered, in the light of modern views on subconsciousness, as an artificial and pathological derangement of consciousness.

In the half-waking state, there is great weakness of conscious reasoning, and during this time the blood-vessels remain, as in deep sleep, in a contracted condition, so that, while we are conscious of cause, we are unable to perform any act,—all of which shows that there is a connection between sleep, consciousness and persistence of the uncontrolled subconscious mind during which the individual is, as it were, detached from the world.

Dreams are of two kinds, those caused by stimuli and those originating in memories of the cerebrum, and it is to the latter type that the yogi hallucinations belong. The yogi, in fact, appears to reach a condition of permanent resting consciousness, and, since it is the exercise of the reasoning powers which causes fatigue and requires rest to repair tissue waste, we can understand how these men are able, even under most unfavorable hygienic conditions, to maintain a certain amount of vitality and often reach a great age.

The goal sought for by the "illuminated" appears to be an understanding of everything by absorption into "universal consciousness," to use their expression. But to our way of thinking, it appears rather that by detaching themselves from their objective consciousness, the psychic centers feeding only on impressions received prior to their renunciation of the world, their activities are limited by this mental polarization. They have knowledge of time and space, because this is accomplished without reasoning powers, and in this psychic state are in an unlimited realm of peaceful spectatorship, as it were, the subconscious mind being able to reach back far into the dim ages of their past ancestors, or, as they believe, into previous incarnations.

By a similar reasoning, we might attempt to explain telepathy, in so far as the subconscious mind is capable of being impressed by other minds. This speculative theory, however, requires proof. I have met yogis able to read the thoughts of others. One man demonstrated to me his ability to speak aloud in a foreign language words I read mentally from a book, and to make in another room an exact copy of a letter I wrote in French. Similar feats, however, are accomplished by professionals at vaudeville shows every day, and yogis do not in my experience have these powers to a greater extent than other Hindoos.

I have seen, however, a rather remarkable demonstration of their power to control visceral innervation. One man could apparently cause his heart to cease beating for almost two minutes. Several Hindoo physicians of undoubted veracity have assured me that yogis can so stimulate peristalsis that

water can be traced running through the intestines and recovered from the rectum within a few minutes after being taken by the mouth.

Adepts of this form of yoga are reputed to be able to control not only the cerebrospinal nervous system, but also the sympathetic ganglia. I have not had the good fortune to witness any remarkable feats of this character, for yogis will not for mere curiosity or gain make exhibitions. I met with one man who could withdraw his testicles from the scrotum into the abdomen, the inguinal canal being apparently patent, but how this was accomplished I am at a loss to explain.

It would be particularly interesting to make an autopsy of a yogi in order to determine any anatomical changes, but the Hindoo public never allows of anything but cremation for these holy men after death.

With reference to the so-called "breathing exercises" of the Raja yogis, these adepts believe that they can by continued practice cultivate a suspension of respiratory movements for some time, during which they are in "Samadhi" and become a part of "universal consciousness"; but in the single example observed by me respiration was arrested only for eighty-eight seconds. During this brief period, the muscles of the limbs seemed to be relaxed, but the eyes were closed, and if there were any symptoms of asphyxia they were so controlled by will power as not to be apparent; neither was there marked pallor.

Persons who have recovered from drowning relate that during a brief interval they review their whole life, and doubtless these yogis believe that they remain in a state of "suspended animation" much longer than they really do. It is conceivable that those who practise breathing exercises long acquire control over their respiratory centers in the medulla oblongata, and that the unexpired and retained carbonic acid in the blood fails to excite these centers, so that movements of the diaphragm are not induced as they would be under similar conditions in normal individuals.

In this connection I would like to remark that hibernating animals, such as the bear, the marmot, and dormouse, are peculiar in having a persistent thymus gland which hypertrophies before and during the winter season, when the respiratory and cardiac movements are abnormally slow and vital processes are reduced to a minimum. The thymus gland in the fetus has probably much to do in allowing the life processes to go on under poor blood oxygenation, and this gland usually atrophies in the adult. It is possible that some yogis have a persistent thymus gland and are able to live in a cataleptic state for long periods, but those capable of this are exceptional.

It is hardly worth while to discuss the alleged occult powers of the yogis. It must be remembered that, since they have no ambition, it is exceedingly difficult to obtain demonstrations to satisfy our curiosity. They believe, however, that during "Samadhi" they are a part of universal consciousness, and that at such a time nothing is to them impossible. As examples of such belief, one very intelligent man who had received a European university education assured me that he could mentally impregnate a woman without coitus, while several asserted that they were able to leave their bodies and visit places and interview people at a distance,—which is in line with the theory held by

some spiritualists that psychics are persons in a condition of unstable equilibrium, able to detach their subconscious mind from the body.

The "tiger manatma" who once visited America, traveling with me to Japan, described to the satisfaction of some American fellow-passengers their home, furniture, relatives and a sick child in Chicago, which city he never visited; this mental effort, however, made him very ill for some days after.

Subconsciousness is operative through a larger brain area than that concerned in objective consciousness, yet in normal individuals such is the intensity of the sensory stimulation that subconsciousness is submerged and unable to work. In the yogi, however, the dominion of the objective and subconscious mind is reversed. Yogis, like those who mortify the flesh and dwell on some fixed idea, become psychic by ascetic practices; this applies also to whirling dervishes, devil dancers, voodoo worshipers, and other fanatics, just as the subconsciousness becomes dominant in the sick. Yogis may be therefore considered as in a pathologicopsychic state, for if they renounce their practices they lose their hallucinations and occult powers and when they give proper attention to diet they regain normal consciousness.

In conclusion, I do not pretend to have thrown much light on this obscure subject, but the suggestions brought forward will, I trust, lead others more competent to continue investigations in this direction.

Yogis are human beings in spite of their ascetic practices, and while their objects are apparently selfish we should consider them with indulgence. The better class are convinced that from their mountain and jungle retreats their resting conscious minds permeate all matter and the mental processes of men and animals, and that their inspiration guides the spiritual world in its progress.

REPORT OF A CASE IN WHICH EPILEPSY IN ADULT LIFE DEVELOPED AFTER THE OVERUSE OF THYROID-GLAND EXTRACT.*

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At the January meeting of this Society I presented clinical evidences of the association of pathological conditions of the thyroid gland with the development of epilepsy in adult life. It has since been my good fortune to be tendered, by Dr. C. S. Potts, the following case report of a patient recently under his care, who presented a corroboration of my contention that the thyroid secretion may play some part in the causation of epilepsy in adult life. My sincere thanks are accorded to Dr. Potts.

The patient was referred to him by an out-of-town physician with the diagnosis epilepsy. At the time of his taking this history, "She is 27 years of age, married. No children. Family history negative. She was perfectly

* Read at a meeting of the Philadelphia Neurological Society, April 26, 1912.

healthy until two years ago, when she took thyroid extract to reduce her weight. She became very nervous and lost fifteen pounds. Shortly after instituting the treatment she had, for the first time in her life, a nocturnal convulsion, in the course of which she bit her tongue. During the last two years she has had only three or four hard convulsions, in the course of which she fell, bit her tongue, etc. No aura. Has had several attacks of petit mal weekly since. Feels weak afterward. Has intervals of two to three months at times. Appetite not very good; bowels regular. Has had much headache lately; drinks a good deal of tea. Pulse, 108. Has been very nervous and easily excited since trouble began. Heart sounds normal. No swelling of the thyroid or exophthalmus. Headache is frontal and occipital; it is not increased by using the eyes. Face becomes flushed when the patient gets excited. Spells began shortly after marriage. Knee-jerks decreased slightly. At times she talks erratically during attack. In one attack she kept saying, 'Isn't it too bad about my brother?' The brother had had some trouble before this."

It is unfortunate that the above history does not state the exact dose of thyroid-gland extract used, nor the length of time over which the treatment extended. Suffice it to say that the patient bought the drug on her own responsibility at a drug-store, and took double the dose prescribed by the clerk. She first consulted her physician for tachycardia, which had become apparent to her. She did not suffer her first epileptic attack until later, and, at the consultation with her physician which followed, herself attributed it to the taking of thyroid.

Examination of her pelvis by her physician showed conditions there to be normal.

Dr. Potts is convinced of the so-called "functional," *i.e.,* non-organic, nature of the convulsions. Beyond the ingestion of the thyroid, no possible cause of the convulsions can be found, unless the practice of coitus reservatus be so regarded.

The case is interesting from the fact that it corroborates my contention that anomalies in the quantity and quality of the thyroid secretion may so act upon the nervous system that an epileptic attack may be determined, either directly or by a primary action or failure of action on other toxins. Like the patients I have already shown, the patient was a female. The attacks developed later in life than the usual time of development in childhood and puberty, and somewhat earlier than we would expect if they were the manifestation of syphilis.

The case is also of interest in that it is a contribution to the toxicology of the thyroid gland. Despite the fact that the symptoms resulting from excessive thyroid medication are well known theoretically to physicians, surprisingly few cases are reported in the literature. In a review of the titles in the Index Medicus, under the subheadings "Organotherapy" and "Toxicology," for the last ten years, I was unable to find a single case of thyroid-gland poisoning, and this despite the fact that we are warned to fortify our doses of thyroid gland with arsenic in order to guard against such symptoms as shortness of breath and tachycardia.

The whole subject of symptoms appearing after the administration of thyroid gland is in dispute. In a recent article, Carlson, Rooks, and McKie,[1] although they concede that the higher development of man's nervous system may render him subject to the symptoms of exophthalmic goiter as the result of excess or perversion of thyroid secretion, and that the protracted administration of thyroid gland in excess to a healthy individual may cause such symptoms as nervousness, dizziness, headache, and even tachycardia,—yet these authors failed to obtain symptoms other than loss of weight, gastroenteritis, and diarrhea on administration of the gland to groups of various animals. I mention this merely to show how obscure our knowledge of this important glandular secretion still is.

AMPUTATION OF THE THIGH FOR GANGRENE.*

By J. HERMAN BRANTH, M.D.,

NEW YORK, N. Y.

On January 5, 1911, I was summoned to consult with the attending physician in the case of G. B. S., a retired sea-captain. I found the left foot and leg cold; pulsation in the leg could not be discovered. On the upper surface of the second and third toes a faint bluish discoloration, the size of a five-cent coin, like an ink-blotch half washed away, could be seen. The pain was very severe, and increased on the slightest movement of the limb. The radial pulse was frequent, about 100 to 120, soft, and intermittent. No appetite; brown-coated tongue; temperature 101° F.

Diagnosis.—Occlusion of vessels, with gangrene imminent. Urinalysis on three separate occasions, by three physicians, once by myself, disclosed the absence of diabetes and of any pathological condition of the kidneys. Senile gangrene was thought improbable owing to the robust appearance of the patient. There was no alcoholic habit. Frost-bite was considered, yet such a history was denied. In the course of treatment the latter origin was admitted as a possibility by patient, and at last the following was learned: The patient had played cards with some friends in a summer cottage on a cold December night; the heating apparatus consisted of a kerosene stove. His feet were chilled, perhaps only numb with the cold. After exposure he immersed the foot in a vessel of hot water. The sudden change of temperature from somewhere below freezing point to, say, 120° F. or more was excessive and coagulation of blood in the vessels had evidently followed. Had he rubbed his limb with snow or

[1] A. J. Carlson, T. R. Rooks, and J. F. McKie: "Attempts to Produce Experimental Hyperthyroidism in Mammals and Birds," American Journal of Physiology, vol. xxx, No. 1, p. 129, April 1, 1912.

* Read at the meeting of the Medical Association of the Greater City of New York on December 18, 1911; also at the meetings of the Northwestern Medical and Surgical Society of New York on December 20, 1911, and of the Medical Society of the County of New York on April 22, 1912.

cold water, and brought on a gradual rise of temperature, perhaps no injury to his limb would have resulted.

Let me quote a case from literature:[1] "Dr. Hayes, the Arctic explorer, relates the following: 'An Esquimau had his leg frozen above the knee-joint, stiff, colorless, and to all appearances lifeless. He was placed in a snow-house at a temperature 20° below zero (F.). The parts were bathed with ice-cold water for about two hours, and then enveloped in furs for three to four hours. Then friction was used, first with feather side of bird skin, then with snow, alternately wrapping the limb in furs, and rubbing it, for nearly twenty-four hours. It was next carefully wrapped up, and the temperature of the snow-house raised by lamps above zero. On the third day the patient was taken to his house (in the Esquimau houses there is often a temperature of 70° to 80° F.) and in seventy hours he was walking about with only a slight frost-bite on one of his toes.' "

Now, it is to be considered that our patient had been exposed to low temperature about the middle of December, had sought medical advice eight to ten days later at his home, at which time such treatment as the above was out of the question. The only course left open was to stimulate the heart, improve nutrition, give opiates in sufficient amount to control pain, await nature's signals in marking out the line between the dead and living tissue, that is, the line of demarcation, and then to amputate. In this case nature did not seem precise in demonstrating this line. The entire foot became black, as well as the tibial region to about two inches below the tubercle and the peroneal side of the leg. The calf appeared white half-way down the leg. The soft tissues near the tibia and fibula were liquefying. Thymol iodide and mercury bichloride solution were used as disinfectants.

The patient was taken to the Bridgeport, Conn., Hospital February 20th for operation.

The proximity of the knee-joint (which, if inflamed, would have led to a fatal ending) suggested amputation of the thigh. This was performed on February 25th. Myelitis of the femur and aneurism of the femoral and popliteal arteries had not been suspected, but were found present. These were probably the result of the conditions below in the limb. We had to perform at once a second amputation several inches higher at the junction of the upper and middle thirds of the thigh, in order to get above the femoral aneurism and with the intention of getting above the infected marrow, which, after sawing off the femur the second time, was cleaned out with the finger about an inch higher still. A coagulated blood-cast perhaps five inches in length was removed from the femoral artery.

A few points in the etiology of frost-bite may bear mentioning. The serum of the blood congeals at a temperature not very far from the freezing point of water. The blood-corpuscles then cannot float along the lumen; they become sticky and adhere to the walls of the vessels, reducing the lumen, and thus increasing the load on the heart-pump, which is thereby fatigued. Finally

[1] Boston Medical Journal, vol. lvii, p. 48.

the coagulum increases in length; it may extend toward and to anywhere near the center of circulation. The clot, or a part of it, may become detached and locate in the pulmonary vessels, the spleen, lungs, liver, kidneys, brain, or even between the heart-valves.

The two aneurisms, one in the femoral and the other in the popliteal arteries, were not composed of layers. The femoral aneurism was the size of a hen's egg and contained a clot like brown putty. The aneurism of the popliteal artery was fusiform. Each aneurism had a channel for the blood-current.

The amputated limb was black, withered in the foot. The anterior tibial and fibular regions were semiliquid; on cutting into them the muscular tissue was putrid, of a gelatinous consistence. The calf was a mere shell of skin, holding the putrid mass.

After the operation the patient suffered from shock, which was met by the usual remedies. In the course of the week he became very hungry, and by the end of the week a full diet was allowed. On March 5th the dressing was removed. The wound was dry, clean, not even a stitch abscess being present. This result, of course, speaks for the high degree of asepsis maintained during the operation. But it was also due to the cooling of the saw by a stream of water so that the heat produced by friction could not injure the bone, and to the flushing of the wound surface with water at 120° in order to remove bone sawdust and any loose particles before stitching the flaps together, and sponging off the stump previous to dressing.

Water at a temperature of 120° F. partially solidifies lymph without devitalizing it, and so glues together the well-fitting apposing flaps as to promote immediate union, much like a carpenter glues two pieces of wood together; there is no capillary hemorrhage, no foreign body between the wound surfaces to retard immediate union or afford a nidus for infection.

In this patient no painful spasms of the stump have been observed. These spasms are generally due to neuroma, *i.e.*, a bulb-shaped ending of the cut end of the great sciatic nerve, which, the writer thinks, is caused by a blood-clot around the nerve's end; this blood-clot organizes into connective and scar tissue, which by contraction irritates and causes pain and spasm. In this patient I ligated the small arteries of the nerve sheath about an inch above the cut end of the sciatic nerve to prevent the formation of neuroma.

On March 5th the first dressing was removed and the two drainage-tubes as well as half of the stitches taken out and another dressing applied. On March 9th patient was in a wheel-chair and wheeled himself through the halls and into the smoking-room. The second dressing and the remaining stitches were removed March 12th. The wound was clean and aseptic; one opening, which formerly held a drainage-tube, was closed. The stump could be moved without pain. It was redressed aseptically.

The recovery was speedy and without interruption by any alarming symptoms. The patient's age is 70 years.

If the surgeon makes his plans for a good stump, the loss of a leg, even with amputation in the upper third, is by no means a calamity. I will prove

this assertion by presenting here two individuals who have lost a leg, one person with a high amputation, the other with an amputation below the knee. At first sight no one seeing these persons walk would recognize the defect; they walk without a cane. This result is partly due to the artificial-leg maker's skill, for this profession has ascended to the level of an art; it is also partly due to the wearer's talent in balancing himself with the new outfit; and finally, it is partly due to the shape of the stump as made by the surgeon. A bad stump will always be troublesome.

I prefer the anteroposterior flap operation. As we all know, the anterior crural nerve originates in the lumbar region of the spinal cord and supplies the extensor muscles of the thigh; the sciatic nerve has its origin in the sacral region and supplies the flexor muscles. Now, if the muscles of the stump are stitched together without respect to their antagonistic function, nutrition of the stump as well as function will be disturbed, and, ten chances to one, atrophy, *i.e.*, a conical stump, will result, for which condition no artificial-leg maker can give entire satisfaction as regards a useful limb. In this patient I kept the flexor and extensor muscles separate as groups, which was done very easily, as each muscle moves in its own sheath. The muscles meet over the end of stump. No shrinkage will follow, as nutrition and function are not entirely interdependent. At present the bulk of muscular tissue on the amputated side is almost as great as in the other limb, so that an ample cushion is formed. In fact, the artificial-leg socket will have to be enlarged, as the muscles of the stump have grown larger since he has begun to use his artificial leg in the last few months. Of course, a person of this patient's age can seldom learn to walk as well as the much younger men already presented. He can, however, walk with two canes, and will no doubt learn to walk better, perhaps very well, during the summer. He has used the artificial limb only a short time, and very little at that.

The mortality in amputation increases the nearer the surgeon approaches to the trunk. In amputation of the thigh it fluctuates between 30 per cent. and 80 per cent. Age is also a factor. Amputation of the thigh for injury has a higher mortality than for disease.

Years ago a young man about 22 years old was brought to the hospital. His foot had been caught fast in a railway frog and a locomotive had run over his leg, crushing it from the condyles down. There was little hemorrhage until he was laid on the hospital bed; then the popliteal artery began to gush. The patient was smiling, but somewhat dazed, yet talkative. I cut off the *débris*, sawed off the femur above the condyles, secured the vessels; yet, before the dressing was completed, the patient suddenly expired.

Before closing, I would like to say a word in regard to anesthesia. In Europe, principally in Germany, surgeons are partial to chloroform. When Dr. Henry B. Sands, one of the great American surgeons of the near past, was a visiting guest at Schede's clinic in Hamburg, the operator quizzed him about anesthesia as practised in America. Dr. Sands referred to the partiality of American surgeons to ether, whereupon he was requested to show the Germans how we give ether. Upon his responding to this, the patient took a few

whiffs of ether and was dead like a flash. I think this was the only case of death by ether Dr. Sands ever saw.

DISCUSSION.

Dr. William Stevens, New York City: Through the kindness of Dr. Branth I witnessed the operation of amputation of the thigh in the case of Captain S. One or two interesting points during the operation I shall mention: The operation was the last resort to save the life of the patient. The integrity of the femoral artery was carefully watched for by the operator. The marrow of the femur was removed from the upper third of the bone, in order to free the cut thigh from any possible infection arising from the region of gangrene, so extensive in this case. I was also impressed, in this successful operation, with the results obtained by the use of hot water—120° F.—which was freely applied after the arteries were ligated. This irrigation with hot water seems to have been the chief factor in preventing the appearance of pus when the dressing was reapplied a week later. The integrity of the femoral artery was not compromised, notwithstanding the presence of a clot, which had been drawn out from it. The infected marrow was cleaned out, the operator relying upon nature's efforts to reproduce the necessary marrow in the stump. When a long bone is fractured and the fragments slide one over the other the marrow channel, in the event that the fracture is not set, is, of course, not continuous for a time. But in the process of repair there are carved out, by absorption, openings into the fragments, and ports of entry or fenestræ are thus formed which re-establish the continuity of the marrow. Dr. Branth evidently relied upon this form of repair in the stump for the reproduction of the dislodged marrow. As to the anesthesia administered by Dr. King, of the Bridgeport Hospital, it seemed to me to be perfect throughout. Dr. Branth's extreme care in regard to every detail in this operation appears to have been the salvation of the patient in question. The asepsis was so perfect that on removal of the dressings eight days after the operation they were as dry as when first applied. The drainage-tube, however, was full of a gelatinous, pinkish substance without odor. On the whole, upon comparison of this case with other similar ones reported in recent years, it appears to me that the result obtained by the operation upon Captain S. was a remarkably good one.

Dr. J. Milton Mabbott, New York City: The reader of this paper has given a good explanation of the origin of amputation neuroma, and his plan to ligate the vessels of the nerve-sheath above the cut to prevent neuroma seems worthy of imitation. I have a patient, an aged general of the Civil War (Major-general Daniel E. Sickles, U. S. Army, retired), who lost a leg in that campaign. Though hale and hearty for his years, he suffers at times excruciating pain in his stump. This pain is apparently due to amputation neuroma. Capt. S., who is also a Civil War veteran, has no pain at all; indeed, feels better, he says, than at any previous time in his life.

Editorial

PSYCHOGENESIS AND INTERNAL SECRETIONS: EXPERIMENTAL DATA AND PATHOGENESIS.

We know very little with certainty about the pathology of hyperthyroidism or disorders of the adrenal system.

The importance of rest in the treatment of these cases is emphasized by most writers, as the conditions present are supposed to depend upon overstrain.

Now, it is very evident that it is not physical overstrain that is meant.

That mental overstrain can produce these syndromes I very much doubt; but that emotional overstrain may be the prime factor in such cases is an explanation to be seriously thought of, in view of the experimental facts which follow.

It has recently been shown, through a brilliant experimental research by Cannon, of Boston, that the emotion of fear in animals is capable of stimulating the flow of adrenal secretion. He demonstrated that in frightened animals the blood from the adrenal vein is so rich in adrenal substance as to be capable of inhibiting peristalsis in an isolated strip of intestinal muscle. This is due to the presence, in appreciable amount, of adrenal substance, since contact of the latter, in a 1:1,000,000 solution, with the intestinal strip will also inhibit peristalsis.

We knew that the emotion of fear could inhibit gastric secretion; and Pawlow has shown that certain emotions of anticipatory joy can induce a flow of this secretion. Crile has shown, experimentally as well as clinically, that the emotion of fear increases the thyroid secretion; he demonstrated this clearly in certain cases,—not necessarily, however, in normal individuals.

Although we have been in the habit of regarding the autonomic nervous system as rigidly autonomic, these experiments show that the sympathetic fibers are somewhat under cerebrospinal control, because in each of the experiments the autonomic symptoms have occurred in virtue of the impressions upon the cerebrospinal nervous system.

It is reasonable to suppose that fear, which, when acute, such experiments have shown capable of exciting the autonomic nervous system and the glands thereto attached, may, when it takes the form of a chronic fear, also produce, less abundantly, but to an extent clinically manifest, an overaction of the autonomic nervous system and through it of the glands it controls.

It is our duty to investigate the chronic notion of fear, which we call anxiety, stress, or propossession, in the genesis of cases of hyperthyroidism and also of hyperadrenalism not due directly to morbid action of the adrenal bodies. I have seen cases of Addison's disease in which the only traceable etiological factor was prolonged stress, and in which autopsy showed no disease whatever, but merely an atrophy of the adrenal-gland substance. The condition may have been congenital, but the fact remains that prolonged stresses have been shown to exist in each case I have seen. Perhaps these cases are homologues of those where hypoplasia follows hyperactivity of the thyroid gland as described by Wilson. Their prolonged anxiety, demanding much adrenal juice for its pressor effect, would lead to eventual exhaustion of the gland and the hypoplasia found *post mortem* in my cases. In these low-pressure cases, adrenal substance has been beneficial in my hands. But a wise hygiene and more especially a sane psychotherapy are also required to prevent continued exhaustion. Such cases can later remain well without taking adrenal when properly re-educated.

Thus, additional clear, physical intercorrelations of mind and body have been experimentally demonstrated, giving rise to inferences which explain what was formerly conceived of so vaguely. From these it will not be difficult to evolve practical means for the relief of suffering and the cure of disease. The scientific psychotherapy which depends on them differs vastly from the crude rule of thumb of the suggestionist. The latter is really no better than the amateur of psychotherapy, whether lay or clerical, who does so much harm with false ideas.

TOM A. WILLIAMS.

Cyclopedia of Current Literature

ANAL FISSURE, TREATMENT OF.

In simple cases, usually of short duration, characterized by a shallow, red, linear tear, palliative treatment is very generally successful. If, after cocainizing such an ulcer, the sphincters are found to be pliable and dilate as readily as the normal anus a cure without operation can be safely predicted.

At the first visit one should proceed with a slow, gentle, moderate digital dilatation. Unhealthy granulations, if present, may be curetted lightly. If possible, the bowels should be regulated by correction of dietary errors, aided by the nightly injection of olive oil. Many cases, however, require laxatives; the author finds cascara or compound licorice powder very satisfactory. Active cathartics must be avoided, as liquid stools induce irritation. Next in importance to regulation of the bowels is cleanliness. The anus should be bathed night and morning with warm water and a sterile gauze dressing smeared with a simple ointment of calomel or boric acid, or, if the pain is unusually severe, cocaine or morphine (gr. v-x to the ounce) may be applied with advantage.

At intervals of four or five days, the ulcer should be cocainized, the sphincters moderately stretched, and an application of ichthyol and glycerin, 15 per cent., or balsam of Peru, 20 per cent. in castor oil, applied upon a small pledget of cotton and allowed to remain for several hours. Nitrate of silver, in stick or solution, has long been a favorable application, and will occasionally produce rapid healing, but its routine use often disappoints. Tuttle recommends the application of pure ichthyol to the fissure 2 or 3 times a week.

Excision is applicable in a large percentage of cases not amenable to palliative treatment and not requiring either dilatation or incision. The operation is a trivial one and consists in infiltrating under and around the fissure with 0.1 per cent. cocaine, after which a small fold of skin at the lower angle of the fissure, or the sentinel pile, if one is present, is seized with tissue forceps and the ulcer excised well up into the anal canal. A catgut suture may be inserted, if thought necessary, but the contraction of the sphincters generally suffices to keep the wound closed. The more suitable cases for this operation are the more recent ones where the ulcer is not too deep and where there is only a moderate degree of hypertrophy and spasm of the external sphincter.

Dilatation has the advantages of simplicity, avoidance of cutting, and but little after-treatment. The author finds it the method of choice where there is but moderate hypertrophy of the sphincter, especially in children and elderly subjects. All cases are relieved temporarily; some recur later, but in carefully selected cases the result will prove, the author believes, eminently satisfactory.

The method of incision, having as its object to eliminate the spasmodic action of the sphincters, has found much favor. It can be carried out under local anesthesia in the majority of cases, and is performed as follows: With a long, fine-pointed needle begin the infiltration in the epidermis about 1½ inches from the anus. Slowly infiltrate about the fissure and sentinel pile, if one is present. Then insert the finger in the anal orifice, feel the interval between the external and in-

ternal sphincters, and press outward. This renders the external sphincter prominent, so that it can be divided with a scalpel as an assistant sponges the line of incision; one is therefore aware when the deepest fibers have been severed. The incision should be made at right angles to the direction of the muscle-fibers and carried outward for at least an inch to secure good drainage; the internal sphincter must not be injured. Any exuberant granulations or undermined mucous membrane adjacent to the fissure should now be removed. If any polypoid growths are felt they should be snipped off and the line of incision packed as is customary after fistula operations. The results following this operation are always excellent. T. Chittenden Hill (Boston Medical and Surgical Journal, April 11, 1912).

BURNS, TREATMENT OF.

The author recommends the dry open-air treatment of extensive burns, a method first advocated by Sneve. After a thorough preliminary cleansing with soap and water and gasoline (an anesthetic being administered, if necessary), the burned area is lightly dusted with an oily powder such as stearate of zinc; only enough of the powder is used to form a thin coating over the surface. Morphine is given to relieve pain and combat shock. Once daily all heavy crusts are removed, exudate wiped off with dry sponges, and another coating of powder dusted on. Under no circumstances must exudate be allowed to accumulate under the crust over twenty-four hours on account of the danger of sepsis from absorption.

The principles of absolute cleanliness and dryness gave ideal results in cases which the author reports. The success of the treatment lies in absolute exposure of the burn all the time; there must be no dressing whatever, and no clothing should cover the burn. The patients, after they become used to going without their usual amount of clothing and realize that they are getting good treatment, do not complain, and the dressing of their injuries is comparatively easy. When the method is faithfully carried out healing goes on with great rapidity, and very little scarring results. Even when the destruction of skin is so extensive that regeneration cannot take place, an ideal surface for the placing of grafts results, the granulations being firm and not elevated above the skin edges. W. A. Jack, Jr. (Washington Medical Annals, May, 1912).

CELLULITIS OF THE HAND, TREATMENT OF.

After a considerable experience with lesions of this kind, the author is of the opinion that antiseptics in the treatment of cellulitis do as much harm as good. The treatment he recommends in the early stages, manifested by severe pain, redness, lymphangitis, with malaise and pyrexia, is to apply a Bier bandage (obstructing the venous and lymphatic flow only), and relieve the pain with hot dressings of saline solution. If the pain is not relieved, the Bier bandage is to be reapplied several times, and if the pain still continues an incision, or incisions, should be made into the part, the bandage again applied, the hot dressings continued, and the hand placed in a bath of hot saline solution thrice daily. Incisions frequently have to be repeated in cellulitis, owing to the breaking down of successive barriers of resistance to the infection, but the operative treatment must always be supplemented with the other measures already described. As further aids, iron and arsenic may be adminis-

tered, a vaccine prepared and injected, and an antitoxic serum given, particularly in the early stages.

After the cellulitis has subsided in the hand, treatment should still be continued with Bier's bandage, active movements, and the electric stimulation of muscles. X-rays and other rays are often useful in causing hyperemia of the deeper tissues, and so causing removal of a greater quantity of the products of inflammation.

Massage and passive movements should only be used in after-treatment when all traces of inflammation or infection have died out. Edred M. Corner (Practitioner, February, 1912).

CLAVICLE, A DRESSING FOR FRACTURE OF.

The lines of force exerted by the ordinary Sayre dressing are just those desired in fracture of the clavicle. The zinc oxide plaster, however, becomes in a few days, the author remarks, an irritant, especially in stout people, and after a day or two, as the body becomes adjusted to the dressing, the full force of the traction is lost, necessitating a reapplication of the dressing, with further skin irritation and finally excoriation.

To meet these objections the author devised a dressing in which the material used consists of heavy moleskin adhesive plaster, which, while more troublesome to apply and taking longer to become firmly adherent to the skin, is non-irritating. First, a piece of moleskin four or five inches wide is passed about the humerus as high up in the axilla as possible, and the ends, for about two inches of their length, caused to adhere to each other. This piece should be about eighteen inches long. Before application, the whole strip should be warmed, to cause it to adhere to the circumference of the arm. At the posterior end of this loop, *i.e.*, where the ends are adherent to each other, six holes are punched and eyelets inserted. A second strip of moleskin is passed about the body, extending from the midline behind around the chest on the healthy side to about the midline in front. The posterior end of this strip is turned over on itself for about two inches and a similar row of eyelets inserted. The two rows of eyelets should be about six inches apart and then an ordinary corset lace put in. With this the ends are drawn together, so that the shoulder can be pulled back as far as desired.

The second part of the dressing includes a broad piece of moleskin about seven inches wide and a foot long, which is applied over the healthy shoulder in the form of a cap extending well down on the arm. (To secure a cap-like structure, it is necessary to cut a "dart" in the moleskin.) The free ends are turned back on themselves and cut to a taper, so that the margin is not more than three inches wide, and a row of four eyelets placed in each end. The last piece of the dressing is a long strip of moleskin three inches wide, passed around the forearm of the injured side close to the elbow, one end extending up the front of the chest, the other up the back. The ends of this strip are also turned back on themselves and each has a row of four eyelets. The strip should be lined with muslin so that there is no adhesive surface exposed except where the moleskin is in contact with the forearm and elbow. A lacing joins this elbow piece with the shoulder cap in front, and another is placed behind. The front and back lacings between the elbow sling and shoulder cap permit the injured shoulder to be raised, or, by tightening one lacing more than the other, the elbow may be brought forward or back as desired. In applying the

dressing, the pieces should be carefully cut and fitted before the adhesive surface is warmed, and the laces should not be tightened before the adhesive has become thoroughly secured to the skin. H. D. Collins (Annals of Surgery, January, 1912).

DIABETES AND THE DUCTLESS GLANDS.

After reviewing from the theoretical standpoint the relations existing between the internal secretory glands and glycosuria, the author calls attention to the fact that there is a tendency at the present time to revert to the doctrine that overproduction of sugar is the main cause of diabetes, and to abandon the theory that diminished consumption by the tissues is the essential element. This view is now held by a number of eminent observers, including von Noorden, who consider that the hyperglycemia and consequent glycosuria are due to an excessive output of sugar by the liver, and that this may arise from excessive stimulation or impaired inhibition. The stimulus to the liver may come from an excess of carbohydrate food, as in alimentary glycosuria; from an increased call by the tissues, from hyperfunction of the suprarenals, etc., or from the central nervous system through the medium of the chromaffine system. Impaired inhibition may arise from suppression or impairment of the functions of the pancreas, or from interference with the controlling action of the thyroid or hypophysis on that organ. In some cases also there is probably a primary anomaly of the liver cells themselves.

The views at present held with regard to the interaction of the ductless glands and their part in the production of diabetes are to some extent theoretical, and this is particularly so as regards the chromaffine system, but they correlate in a much more satisfactory manner than has previously been possible the experimental data that have accumulated as to the effects of these organs on carbohydrate metabolism, and they bring into line the known facts in the etiology of diabetes. Whether subsequent observation confirms, or in part disproves, these theories, there can be no doubt that they open up a wider conception of the possible pathology of glycosuria, and indicate that it is not a sign of one disease, but a symptom common to several diseases. P. J. Cammidge (Practitioner, February, 1912).

ERYSIPELAS, TREATMENT OF.

In mild cases the author recommends that the involved area be painted every hour with a preparation consisting of 15 minims (1 c.c.) of phenol and 1 ounce (30 c.c.) of oil of turpentine. Severe cases, in which the disease extends over wide areas, are to be treated with dressings soaked in mercury bichloride, or, better, in absolute alcohol, applied twice daily, or oftener if required. Internally the author administers 1 tablespoonful (15 c.c.) of camphor water, three times a day, and by enema 15 grains (1 Gm.) of collargol, twice daily. In a long experience no cases of erysipelas were lost under this plan of treatment. Van Velzen (Münchener medizinische Wochenschrift, February 8, 1912).

HYPOTHYROIDISM.

Attention is called by the author to the fact that the slighter grades of myxedema are not infrequently overlooked. They are not easy of recognition. As the disease usually occurs in women nearing or during the menopause, the symptoms are usually attributed to this as a cause. No one of the symptoms can be considered as characteristic. A

subicteroid hue of the skin is common, and the skin is dry, perhaps scaly, the patient perspiring little or not at all, even in hot weather. The body as a whole tends to become heavier, and there may be fat pads above the clavicles, over the sternum, and on the dorsal vertebræ. Occasional transient swellings on the face, shoulders, and ankles may occur. The hair and eyebrows are somewhat thinned. There is often a history of muscular aches, and pains in the knees and ankles. A curious symptom, which is not uncommon, is a sudden giving way of the knees. Neuralgias are troublesome, and paresthesias frequently present. These persons are very sensitive to cold, and are apt to wear an abnormal amount of clothing. The body temperature is now and then subnormal. They are easily fatigued, lack vigor, and possess low immunizing powers, so that they easily fall victims to infections of any kind. The mind becomes sluggish, the individual lacks initiative, and there is a certain slowness of speech previously, perhaps, unknown. The voice may be slightly husky. Quite often there is complaint of dyspnea, sometimes severe, but on examination of the heart nothing but a weak first sound and a moderate dilatation is discovered.

At first sight of such a case one is quite likely to suspect the existence of a chronic nephritis because of the puffy eyelids, or cardiac disease, because of the dyspnea. But if on further examination one does not obtain evidence of renal or heart lesions, *i.e.*, if the symptoms pointing to such lesions are utterly disproportionate to the actual findings, it is well to suspect the existence of an incipient or incomplete myxedema. The therapeutic test will, in such cases, decide the diagnosis. The exhibition of thyroid extract in moderate doses for a month will either confirm or disprove the existence of hypothyroidism by the relief, or non-relief, which ensues. The practical lesson is to suspect deficient thyroid secretion in women near the climacteric who have increased in weight, show a yellowed skin and puffy face, complain of coldness, rheumatic pains, and dyspnea, and are dull and sluggish. G. R. Butler (Long Island Medical Journal, April, 1912).

INFANTILE DIARRHEA, TREATMENT OF.

The use of the following combination is highly recommended by the author in the treatment of the more severe forms of infantile diarrhea:—

℞ Magnesii sulphatis, ʒj-ij (4.0-8.0 Gm.).
Mucilaginis acaciæ, fʒss (15 c.c.).
Phenylis salicyl., gr. v-x (0.3-0.6 Gm.).
Glycerini, fʒiij (12 c.c.).
Aq. chlorof., q. s. ad fʒiij (90 c.c.).—M.

One teaspoonful is given every one, two, or three hours, sleeping or waking, vomiting or not. Glycerin is further added when the urine is concentrated, and a little sweet spirit of niter is given separately when this is very marked. In a small proportion of cases the salol disagrees, causing nausea and vomiting, and is then omitted. The character of the stools is taken as guide to the frequency of administration of the preparation. If the blood in them does not diminish, the number of doses should be increased. Continuous use of the medicine, even at night, is essential, even in children less than a month old. There should be no reduction in the doses till the "slime" has disappeared from the stools.

As regards feeding, the author uses barley water and white of egg beaten up with an equal quantity of water, or, better, soda water. In serious cases, peptonoids are added, though care must be exercised in their use, as they occasion-

ally disagree. A pinch of pepsin scales placed on the tongue after food is often of much benefit. H. A. Ellis (Australasian Medical Gazette, January 13, 1912).

INTESTINAL OBSTRUCTION, ACUTE, OPERATIVE TREATMENT OF.

The author decries the use of taxis in the treatment of incarcerated and strangulated hernia, stating that his experience has shown him that in a patient who has a reducible hernia which suddenly becomes irreducible, if he, the patient, cannot reduce it, a surgeon cannot without doing damage to the contents of the sac. Early operative intervention is advocated not only in this, but in other conditions giving rise to intestinal obstruction.

The preparation for operation should begin with a careful washing of the stomach; this will almost always be found filled with highly toxic material, the removal of which is of the greatest importance. This measure will also avoid the danger of fecal drowning. Hypodermoclysis before and during the operation should be given, if the condition of the patient demands it.

In operating in a case of gangrenous bowel due to strangulated hernia, the sac is opened in the usual way. After relieving the constriction, the bowel is gently pulled down until healthy gut is reached, and a clamp applied well back in healthy tissue, then another on the distal bowel, after which the bowel is cut across. A Paul tube or an ordinary glass drainage tube to which a rubber hose has been attached is then at once tied in the proximal bowel and the clamp above removed. The gut to be removed is isolated with gauze, and, while the operator ties off the mesentery, the assistant manipulates the bowel above so that as much of the septic intestinal contents as possible can be drained into a receptacle under the table. By this method no time is lost, and when the operator has removed the gangrenous segment the gut above will have drained an astonishing amount. The proximal bowel is then again gently clamped and the anastomosis completed either with sutures or the button. A stab wound is made above the pubis and a drainage tube placed in the vesicorectal pouch. The hernial ring is then closed by the method suited to the case. A small drain should be placed in the hernial wound.

Where the strangulated hernia is of the femoral variety, the author makes a supplementary abdominal incision, through which the gut is delivered. Wide resection can thus be accomplished and proper drainage of the bowel above instituted, a procedure which would be difficult at the femoral outlet. In all varieties of cases the resection of gangrenous bowel should be made wide, well back into healthy tissue, in order to avoid leakage. The author believes it far safer to resect in all cases where the vitality of the gut is in any way questionable.

Where the patient's condition is such as to render the making of an artificial anus mandatory, the author has found the following procedure valuable: The bowel above and below the gangrenous portion is rapidly pulled into the opening. A heavy clamp is passed through the mesentery at either limit of the diseased portion. The mesentery is then tightly clamped. A clamp is next placed on the distended bowel above, another below it, and the bowel cut across. The bowel below is then similarly clamped, after which a rubber drainage tube is tied in both the proximal and distal ends

of bowel. The gangrenous gut is quickly cut away and the clamp holds the mesentery fixed in the opening. The two tubes are tied together with catgut suture. Gauze is then made to surround the protruding bowel and the wound is left open. Clamping the mesentery as described serves both to control hemorrhage and fix the two ends of bowel in the wound. In a few days the clamp, gauze, and tube can be removed. The irritation of the fecal matter generally results in firm contraction of the wound, leaving the two ends of bowel firmly fixed.

The postoperative treatment includes the frequent use of the stomach-tube, the avoidance of morphine and strychnine, the withholding of all foods by mouth, and the liberal use of normal salt solution, both under the skin and in the rectum. J. Y. Brown (Journal of the Missouri State Medical Association, February, 1912).

LACTIC CULTURES IN INTESTINAL DISORDERS.

The author presents a report of results obtained by the administration of fresh liquid cultures of lactic bacilli in various types of intestinal disorder. The bacilli were cultivated in a private laboratory, the *Bacillus bulgaricus* (bac. of Massol) being grown alone in pure culture. The dosage used was, for babies, 1 teaspoonful three or four times daily, and, for adults, 3 to 4 teaspoonfuls two or three times daily, according to the severity of the case, preferably given in sweetened water before meals, when the gastric hydrochloric acidity is low.

The cases benefited by the treatment are divided by the author into three classes: 1. Indigestion of markedly putrefactive type with odorous stools and indican in the urine. Indolacetic acid is not present or in but small amount. The condition seems due to various anaërobic bacilli, most of which require an alkaline medium for active growth; the colon bacillus, while present, is not prominent. Some of the toxin-producing bacilli are not normal to the intestinal tract, but have been introduced with decayed or infected food, and the abnormal flora, once established, may continue for years. Constipation or diarrhea may be present; the amount of pain, tenderness, and distention is variable.

In this form of indigestion the lactic cultures proved almost always curative. No other medication was given, except cathartics if required; antiseptics were especially avoided, as they retard the growth of the lactic bacilli. The dietary regulation prescribed is stated as follows: Meats and eggs should be taken in limited amount; in severe cases it is better to withdraw them entirely in the first week. Buttermilk and milk are desirable; the latter must contain no preservative; otherwise, it will greatly retard recovery. Fruits and sweets may be taken freely; also the fats, cream, butter, bacon, and gelatin. If the starch digestion is good there is no objection to vegetables. If to these articles are added bread and cereals, a varied and satisfying diet is obtained which can be continued as long as required. It will effect a cure alone in mild cases of indicanuria; but the cure is slow, and the author usually employs the cultures in addition.

2. The second class of cases is that in which the colon bacillus and other allied organisms are believed to dominate. While this bacillus is normal to the intestine, it assumes in these cases an intense, abnormal action, or may extend higher up in the small intestine. The movements are seldom offensive, but

there is a varying amount of abdominal pain, tenderness, and distention. The urine shows indolacetic acid, with or without indican. In the severe cases there is a long train of nervous symptoms: tremor, insomnia, worry, and apprehension, with inability to work. Many cases of "nervous exhaustion," "brain-fag" are in this class. The results obtained with lactic cultures were not as good as in the first class. Most of the mild or moderately severe cases recovered, but the treatment always took time. The diet was similar to that already described except that the sugars and sweet fruits were limited. The best guide for the treatment in both classes of cases is afforded by frequent urinalyses.

3. A third and very important group of cases is that of *enterocolitis in infants.* Here lives can be saved by the treatment. In the author's experience the lactic cultures invariably led to a cure, except where the case was so far advanced as to be within twenty-four hours of death —the cultures not acting immediately. Usually in two or three days the stools become yellow and normal, and the fever, pain, restlessness, or other symptoms subside.

The procedure employed for babies of any age is described by the author as follows: The preliminary dose or two of castor oil is usually employed. No other medication is given except lime water or a little calcium carbonate. The cultures are administered in doses of 1 teaspoonful every six hours, or, better, ½ teaspoonful every three hours, in a little water with ½ teaspoonful of milk-sugar. The best diet for the first one or two days is whey, made from pure milk and diluted according to age; when the worst symptoms have abated, milk may be added in increasing quantity. For older babies, barley water or other cereal water with milk-sugar makes a desirable addition. It is absolutely essential to be sure that the milk used contains no preservative; otherwise, the lactic bacilli will not grow, and fatal results from the disease may ensue in infants that would otherwise have been saved by the treatment. Where the purity of the milk is not certainly known, the author avoids it entirely, and gives for the first one or two days barley water or some cereal water with lime water and milk-sugar. As the case improves a little condensed milk is added, gradually increasing the quantity until recovery. In breast-fed babies the milk was usually continued from the first and the cultures given between feedings. In all cases, when the stools became normal and the symptoms subsided, the dose of culture was reduced, but a little was usually given for a week or more.

It was not found necessary to use rectal or colon washings.

Several cry babies with green and undigested stools had a form of infection that yielded to the treatment in the same manner as those with cholera infantum. A few cases of marasmus also recovered under the treatment, though the latter was naturally more prolonged. E. I. Harrington (New York State Journal of Medicine, February, 1912).

LEG ULCERS, BONE LESIONS ACCOMPANYING CHRONIC.

The old ideas as to the causation and persistence of chronic leg ulcers—constant standing, weakened veins, sedentary life of women, and pelvic troubles incident to their sex—are doubtless applicable, the author remarks, to many cases; but he cannot accept them as explaining all. Long-continued ulceration of the leg, whether varicose, specific or undetermined, is often accompanied, he empha-

sizes, by extensive changes in the underlying long bones, often only demonstrable by radiographs. A careful examination and thoughtful interpretation of the latter will permit of differentiating the specific from the non-specific bone lesions.

These underlying lesions of bone are of great importance as regards treatment, as they occur too commonly to be ignored or passed over as occasional. In long-continued ulcerations, the periosteum becomes finally involved. In specific cases the bone process is not by direct extension in the majority of cases, but the bone lesions are an index, as it were, of the probable character of the ulceration of the soft parts. Some cases, however, undoubtedly arise from direct extension of a specific process in the periosteum outward to the soft tissues.

Iodide of potassium will help both kinds, specific or non-specific, many of these cases having a high blood-pressure. All cases of leg ulcers should have radiographs taken of the underlying bones, and be carefully tested for tabes. Many of them, supposedly varicose on account of accompanying varicose veins, are in reality specific. W. Pearce Coues (Boston Medical and Surgical Journal, March 14, 1912).

MENTHOL, DANGERS OF, IN RHINOLOGY.

Far from being harmless, menthol often exerts, the author points out, a decidedly irritating effect and may lead to serious and even fatal results. Though instillations of menthol in 1 and even 2 per cent. strength are freely recommended in many textbooks, attention has not yet been sufficiently drawn to the attendant dangers. The author refers to no less than 11 cases in which the dropping of preparations containing menthol into the nostrils of infants suffering from coryza caused dyspnea, flow of frothy mucus from the nose, cyanosis, and occasionally spasm of the glottis and convulsions. In one infant with acute coryza, but otherwise healthy, the use of a small amount of mentholated petrolatum (2 per cent.) caused death in less than ten minutes. Such accidents with menthol are to be accounted for either by passage of oil containing it into the larynx, by reflex glottic spasm owing to irritation of the nasal mucous membrane (as illustrated in cases where mentholated petrolatum was placed in the nostrils, and could therefore not reach the larynx), by an abundant reflex flow of nasal and tracheal secretions causing cyanosis and asphyxia, or, finally, by reflex inhibitory effects on the respiration or heart. Killian has pointed out in this connection the fact that where the nasal mucosa is acutely inflamed extremely intense reflex effects may be produced by irritation of the terminals of the trifacial nerve. The author concludes that in nurslings and, indeed, in any child less than 3 years of age no preparation containing menthol should be used; intratracheal injections of mentholated preparations, and even instillations of a single drop of mentholated oil, should be avoided in children less than 7 years old. As substitutes, for intranasal medication, Nageotte-Wilbouchewitch counsels petrolatum containing 1 per cent. of calomel, while Ausset employs instillations of oil containing 4 per cent. of boric acid. The author, in cases of nasal obstruction in newborn infants, finds it effective to drop a few drops of normal saline solution into the nostrils from a teaspoon, and follow this some minutes later with a few drops of oil containing resorcin (1 to 30). While this procedure is not claimed to asepticize the nasal cavity, the mechan-

ical effects often suffice to open the nasal passages for respiration.

Other acute symptoms which may be produced by menthol in those with delicate and sensitive mucous membranes include pain, conjunctivitis, a pseudo-erysipelas with violent headache, cough due to pharyngeal irritation, and even reflex otalgia owing to contact of the remedy with the Eustachian orifice.

Continued use of menthol may be observed very frequently to induce erythema of the lips and nostrils, and sometimes, where strong preparations of it have been employed, chronic hypertrophic processes of the nasal mucosa, especially at the anterior extremities of the lower turbinates. A kind of "mentholism" in which the use of progressively stronger preparations of menthol is necessary in order to obtain relief of symptoms is stated by the author to occur in patients who use menthol habitually because of constant or intermittent nasal obstruction.

While menthol is sometimes of great service, especially in catarrhal rhinitis, laryngitis, and sinus inflammations, it should be prescribed only in small amounts and for a short time, and in the treatment of infants its use should be entirely abandoned. Robert Leroux ("Annales des maladies de l'oreille, du larynx," etc., vol. xxxvii, 1911, No. 11).

NEPHRITIS, TREATMENT OF THE CIRCULATION IN CHRONIC INTERSTITIAL.

In endeavoring to protect the patient with nephritis in its early stages from the ultimately inevitable failure of the circulatory balance, the author prescribes the following diet: Breakfast: Large helpings of bulky fruits; an egg and two thin slices of bacon; an ordinary slice of bread, or an equivalent of toast, muffin, whaffles, cereal, etc.; tea, cocoa, coffee, milk, water, or carbonated water. Luncheon: A very large helping of some vegetable salad, to which may be added pickles, olives, or other relish; a moderate amount of cheese; breads and liquids as at breakfast. Dinner: Vegetable, milk, or cream soup; a piece of meat, fowl, fish, or game, about two by two by one-half inch in size; gravies in moderation; freely of all kinds of succulent vegetables, though moderately of potato, sweet potato, rice, and other starchy foods; breads and liquids as at breakfast; a simple dessert. The total amount of food taken should be the smallest which will maintain nutrition at the highest level, the best measure of this, from the standpoint of the patient, being the maintenance of body weight and a sense of well-being. Should there be a tendency to take on weight, the quantities of bread, potato, and other starchy foods should be reduced, and *vice versâ*. Upon rising, and also two and one-half or three hours after meals, a small glass of water or carbonated water should be taken.

A fair amount of active physical exercise is desirable. Should it be impracticable, massage should replace it. Overexertion, strain, and undue exposure are to be shunned. The body weight should be taken weekly and recorded. Once a week also all the liquids taken should be measured, as well as all the urine voided, and a specimen of the latter examined. Once in four weeks, 2 freshly made 5-grain pills of mercurial mass should be taken every night for three days, followed the first time by ½ ounce of castor oil in the morning, and the other two mornings by a saline.

Upon detection of the slightest evidences of circulatory embarrassment or occult edema, or of manifest dropsy or uremia, the patient should be put to bed,

in as nearly a horizontal position as possible, where he should remain until the circulatory balance has been restored. It is usually advisable to prescribe digitalis in some active preparation, as, *e.g.*, the freshly prepared infusion; there should be no hesitation with the drug upon the theoretical ground of increased blood-pressure: the latter is not materially raised by digitalis under these circumstances. The author objects to the "salt-free" diet as a special system of treatment. He prefers to replace the excess of sodium chloride present with the corresponding salt of calcium and with this object in view gives the lacto-phosphate of lime in fairly large doses, with apparent benefit. The same results may be had by giving milk, gelatin, and other lime-bearing foods in suitable quantities. Until every vestige of tissue-serum excess has been drained away, the intake of liquids should be well below the output, as determined by actual measurement. At this time the mercurial mass should be repeated more frequently, and the saline may be given every morning if required.

In the third, or terminal, stage of the malady the symptoms include dyspnea, various uremic manifestations, increasing occult edema, and, finally, established dependent dropsy. Removal of superfluous tissue serum is now an essential first step, and the method of procedure is important: During three days the diet should consist of thin gruels, cream and water soups, tea, coffee, water, and carbonated waters. The first and second days the daily total amount should be about 1500 c.c.; on the third day it should not exceed 1000 c.c. Every night, including that preceding the first day, 2 5-grain mercurial pills should be taken, followed the first time by castor oil, then by a saline, in the morning. Beginning with the fourth morning give $\frac{1}{20}$ grain of pure elaterin every hour for three doses; later $\frac{1}{10}$ grain every two hours until ten or twelve very free watery movements have been secured. This may require two or three days, during which the patient should have no solid food, and very little liquid. Following the intestinal drain the flow of urine usually becomes very free,—as much as 6000 c.c. in a day. The flow thus started ordinarily continues until the edema has disappeared, but it should be stimulated by digitalis infusion, theocin, external warmth, the recumbent position, etc. The advantage of this method lies in that there occurs a selective excretion of the dropsical liquid by the intestinal and renal cells, ordinarily the albuminous and other useful nutritive materials being largely retained in the body.

In some cases the method is impracticable. Evacuation of serum directly from the subcutaneous tissues becomes necessary, preferably with Southey's tubes. With antiseptic precautions, infection through these is almost unknown. Two tubes in each leg, one inside and the other outside, usually suffice. The patient should be semirecumbent and rendered comfortable, and the drainage continued until edema is largely gone. Ten to 30 pints may thus be removed in twenty-four hours, and from four to seven days are required to complete the process. Upon removal of the tubes a dry antiseptic powder should be used, an elastic bandage applied to the feet and legs, and the feet kept at a higher level than the hips. The small openings rapidly close under this management. The termination of the procedure, however, discloses an astounding degree of emaciation. With complete exhaustion of the stored-up fats, and the proteid tissues already heavily drawn upon, star-

vation acidosis is the next danger to be feared. A carefully adjusted dietary is now required, of which the following may be considered as typical: Breads of all kinds, 124 Gm.; oatmeal or other cereal, 31; rice, 31; potato, 62; meat, fowl, or fish, lean, 31; meat, fat, 31; eggs, 96; sugar, 15.5; butter, 15.5; cream, 15 per cent., 124; milk (3 per cent. cream), 500; cheese, 15.5. All these are minimal quantities. The total caloric value is 2571. To the articles given there may be added, or substituted for a portion, all kinds of succulent vegetables and fruits, properly prepared. The table salt should be limited to somewhat less than the renal secretory capacity. Of liquids, 1000 to 1500 c.c. is ordinarily the proper quantity, but they should not exceed the output by the kidneys and intestines.

Some of the successes obtained in the several stages of nephritis by the procedures outlined, according to the author, may well take rank among the marvels of medical achievement. E. F. Wells (American Journal of the Medical Sciences, January, 1912).

OSTEOMALACIA, SENILE.

Attention is called by the author to the fact that, in addition to the common form of osteomalacia related to pregnancy, there exists a variety of the disease occurring in the aged of both sexes, and sometimes mistaken for a process of osteoporosis; 6 cases of this kind, 5 in women and 1 in a man aged 65, are reported by the author. All complained of severe pain in the bones, especially those of the thorax and pelvis; showed a diminution of stature, and had muscular cramps in the limbs when they tried to walk which prevented them from straightening up. The diagnosis from osteoporosis rests upon the fact that in the latter the bone remains hard, losing its strength merely through atrophy and rarefaction of the organic components. Arthritis deformans might also be confused with senile osteomalacia in a superficial examination.

Regarding treatment, the author used with considerable success daily doses of 3 to 5 dessertspoonfuls of a 0.01 per cent. solution of phosphorus in codliver oil, together with rest in bed and baths as adjuvants. Castration or ovariotomy might also, theoretically speaking, prove of use. J. Reich (Mitteilungen aus den Grenzgebieten der Medizin und Chirurgie; Revue de thérapeutique médico-chirurgicale, March 15, 1912).

PELLAGRA, TREATMENT OF.

In mild cases of pellagra or in those cases in which a cure seems to have been effected, much care should be taken to observe the usual rules of hygiene. The patient should have a moderate amount of exercise and fresh air, avoiding, however, fatigue and the direct rays of the sun. The diet should be varied and contain a reasonable amount of fruits and green vegetables; corn and all of its products should be excluded.

The majority of cases will at some time or other be benefited by arsenic. Early in the disease its action when given in large doses appears to be almost specific, whereas late, when extensive nerve degenerations have taken place, benefit is only to be derived, in the author's opinion, with small doses. In the earlier stages he has had the best results with soamin administered hypodermically, starting with 1-grain doses every other day and increasing up to 3 or more grains to the dose until from 75 to 100 grains have been given, followed by a period of rest for a couple of weeks, then another course of the drug if necessary. For internal use he believes Dono-

van's solution to give results slightly superior to those of Fowler's solution. The method recommended by Babes, of using atoxyl hypodermically, arsenic trioxide internally in $\frac{1}{30}$-grain doses, and about a dram of a 2 per cent. arsenic trioxide ointment rubbed into the skin, would seem valuable in the early stages.

Iron preparations seemed of no value, except possibly after apparent cure, in the presence of considerable anemia. Iodine and its preparations seemed to do good only for a short time, while mercury appeared to do harm, except when given in Donovan's solution.

Massage and hydrotherapy the author considers both extremely useful, especially salt and bran baths. The salt baths are best given daily at body temperature, using a coarsely powdered salt, a handful at a time, just moistened and then rubbed vigorously all over the body.

As regards skin lesions, where redness is beginning and the surface is little, if at all, broken, a plain moist dressing of boric acid solution or an ointment of boric acid or zinc oxide usually suffices. Where the epithelium is being regenerated, but is still tender and tends to "weep," the surface may be painted occasionally with a weak picric acid solution. Where extensive sloughing has occurred, with pyogenic infection, the parts should be washed daily with hydrogen peroxide and some antiseptic dusting powder, such as aristol or bismuth formic iodide, lightly dusted upon the surface. Where the general health is not too greatly impaired, an autogenous vaccine may limit the extension of the septic process. Calcium sulphide internally should also be given. Where there is merely desquamation, dryness, and thickening, a daily salt rub and massage with lanolin or cocoa butter are useful.

In overcoming gastrointestinal symptoms, the author obtained good results with a mixture of 20 drops of dilute hydrochloric acid or nitrohydrochloric acid with 1 dram of essence of pepsin and perhaps 10 drops of tincture of nux vomica after each meal for an indefinite period. For vomiting, a mixture of cerium oxalate, chloretone, and bismuth subnitrate was useful. For sore, ulcerated mouths, dilute hydrogen peroxide solution, the alkaline antiseptic wash of the National Formulary, potassium chlorate, and dilute tincture of myrrh gave the best results. Between-times and at night the mouth was rinsed with milk of magnesia. To overcome excessive diarrhea, the author prefers a dram or more of bismuth subnitrate, with phenyl salicylate and albumin tannate, to any other drugs. Enemas of cold water or boric acid proved most useful for tenesmus.

In the presence of marked inanition the use of gradually increasing doses of thyroid extract for a few weeks has seemed to be of benefit in a few cases reported to the author. Amebæ, uncinariæ, or other intestinal parasites should always be examined for and exterminated before attempting any other treatment. Louis Leroy (Southern Medical Journal, March, 1912).

POISONING BY ACIDS, TREATMENT OF.

The author reports the case of a man who had swallowed sulphuric acid, in which the principle of treatment now recognized in diabetic coma, that of neutralizing the acids in the bloodstream, was put to the test in this new field. Two hours after the ingestion of the acid, a suspension of magnesium oxide had been introduced into the stomach through a tube, and tracheotomy had been performed because of edema of the glottis. Six hours after the acid had

been taken the patient was in a comatose state, which the author ascribes to the fact that the acid had withdrawn alkalies from the tissues to neutralize it, with consequent interruption of nervous functions. At this time 300 c.c. of a 5 per cent. solution of sodium carbonate was injected into the basilic vein. Immediately the patient recovered consciousness and asked to drink some water. Recovery eventually took place, though thrombosis occurred at the place of injection. It is advisable in using this measure to expose completely the vein into which the injection is to be given, in order to avoid contact of the alkaline solution with the surrounding tissues. Marchand (Münchener medizinische Wochenschrift, January 23, 1912).

POISONING BY VERONAL.

The author reports the case of a female patient aged 22 who had frequently taken veronal to relieve headache, and one day, at 6 P.M., took 100 grains at a dose. A physician called at 9 found her unconscious and administered 2 injections of $\frac{1}{30}$ grain of strychnine sulphate. Upon entering the hospital the next day at 5 P.M. she was still unconscious. Reflexes were normal; pupils reacted to light; temperature, 103.6°; pulse, 130; respiration, 60. Auscultation showed moist râles on both sides; abdomen was slightly distended; there was some rigidity of lower jaw; skin dry and hot. Camphorated oil hypodermically every two hours was ordered. At 8 P.M. the temperature was 104° and the pulse 144; 1 ounce of a dark-colored urine with specific gravity 1030 was obtained by catheterization. On the following day the respiration was of Cheyne-Stokes character. Temperature remained high, but the patient was able to take a little nourishment. There was evidence of collapse. Hypodermoclysis of 655 c.c. of normal salt solution was administered, under which, with strychnine and digitalone, the patient improved. Next day the temperature reached 104.5°, but the patient later seemed stronger and was purged with magnesium sulphate. After this, gradual recovery took place. The patient was still in a stupor, but deglutition was not difficult. Urine passed without the patient's knowledge; a specimen obtained by catheterization showed 0.4 per cent. of albumin. The patient left the hospital eleven days after admission. S. E. Earp (Indianapolis Medical Journal, February, 1912).

PREOPERATIVE PREPARATORY TREATMENT.

In an analysis of a series of 500 consecutive laparotomies, the author states, concerning the preoperative treatment, that if the patient is well aside from the disease for which operation is performed nothing excepting an empty flaccid bowel and a clean operative field is needed. One dose of castor oil, an early morning enema, and exclusion of milk from the liquid diet for the preceding twenty-four hours accomplish the former without distress. As to the skin preparation, observation showed the author some years ago that emergency cases which could only be prepared immediately before operation invariably had fewer stitch abscesses and less skin reaction than those formally prepared with scrubbing, shaving and a soap poultice the day before, and a moist bichloride compress until the time of operation. Consequently the soap poultice was abandoned by the author, and then the bichloride compress. At present, his procedure is limited to the following: On the night before operation the

abdominal wall is shaved, washed with soap and water with a sponge, not with a brush; the washing is followed by alcohol, and a sterile dry dressing is applied. In the operating room and before anesthesia the washing is repeated, followed by alcohol, Harrington's solution, and alcohol again, and the field covered with a sterile towel which remains until anesthesia is complete. If suturing is properly done no stitch abscesses follow this method in clean cases. The author sees no necessity for staining the linen and using iodine on the patient's skin. The skin cannot be absolutely sterilized, and the iodine preparation, in his opinion, has gained its great popularity through the fact that it prevents overpreparation and thus preserves the natural resisting power. No dependence is placed by him on bichloride for sterilizing the hands, and it is rarely used. R. E. Skeel (Cleveland Medical Journal, February, 1912).

PRURITUS ANI, ETIOLOGY AND TREATMENT OF.

Upon investigating bacteriologically 19 cases of true "idiopathic" pruritus ani the author found that streptococci were present externally on the skin in excessive numbers in every case. On the other hand, 5 cases having other rectal diseases, examined in exactly the same way, showed no streptococci except in one instance, in which a few were found. The opsonic index in the pruritus cases proved to be low for streptococci and high for other organisms. Upon the basis of these data the author concludes that true pruritus ani is the result of an infection by or associated with one of the streptococci group.

Eight of the patients were treated with injections of an autogenous vaccine made from the organisms found on the skin. The results were so satisfactory—itching disappearing or growing less after 4 or 5 injections, and the local moisture diminishing—that the author believes this method offers our best hope of cure in these cases. In the patients who were treated with vaccine alone the results were as good as in those who received topical treatment as well. D. H. Murray (Journal of the American Medical Association, December 9, 1911).

PYORRHŒA ALVEOLARIS, TREATMENT OF.

The author makes a plea for ionization in the treatment of this condition, stating that, no matter how carefully antiseptics be applied by the ordinary methods of syringing, irrigation, or wiping out of pockets, the effects are not complete and lasting, because the microorganisms are not merely on the surface, but penetrate deeply into the tissues. Ions migrate through the very protoplasm of cells, and bacteria lying deep in are reached by their antiseptic action.

The drugs found most efficacious by the author are zinc chloride in 3 per cent. solution, cuprol 2 per cent., and argyrol 5 per cent., from which ions of zinc, copper, and silver are formed at the positive pole, and iodine, from which ions are formed at the negative pole. The current strength necessary to form ions is low; 0.5 milliampère is perhaps the lowest, but 2 or 3 milliampères are sufficient and are readily tolerated by most patients. The stronger the current, the deeper the penetration and the more rapid the effect. It is not desirable to apply the opposite element close to the site of ionization. On the face, for instance, if the electrode is held in the hand contact is just as effective and more comfortable to the patient. E. Sturridge (Proceedings of the Royal Society of Medicine, March, 1912).

QUINSY, TREATMENT OF.

As soon as pus is formed and easily located, the indication for incision in quinsy is clear. But up to this time the patient has already been suffering intensely, and is often in great danger owing to possible extension of the process to surrounding structures. If a way can be found to drain the pus accumulation at its inception by tracking the infection, both duration and danger will be lessened. Such a way the author has attempted to discover, and he has succeeded.

In its development the tonsil is nothing but an overgrown lymphoid deposit in the mucous membrane. The bottom of the fossa is formed of what in extrauterine life is called the capsule, which is separated by a small interval from the superior constrictor muscle. The lymphatics enter this space and drain into the deep cervical chain of lymphatics underneath the sternocleidomastoid muscle. It is also known that the crypts discharging into the supratonsillar fossa have poor drainage, and consequently are more subject to infection. By probing them in incipient cases one might relieve the tissues from pressure and thus stop further penetration of infection, or where pus formation has extended through the capsule, or a little beyond, probing might evacuate the small abscess.

With an ordinary tonsil slitter or tonsil probe the author probes these cases at their inception. In about 8 out of 10 cases this procedure actually can be carried out, with the result that after evacuating the few drops of pus the progress of the infection stops. With the aid of reflected light and a tongue depressor the tonsil is inspected, and the fossæ, especially the upper ones, entered one after the other. Where the bottom appears soft, the rounded point of the instrument is pushed deeper into the tissue, the capsule pierced, and the peritonsillar space entered. If pus has been reached, a few drops of it will follow the probe, and a sense of relief be experienced by the patient. The small opening made evidently suffices to allow gradual seeping out of the small amount of pus that may still be in the tissues.

The procedure is practically always successful where there are abscesses in the tonsil itself. If it does not succeed in other cases, one has not, at least, inflicted much pain nor any wound. It cannot take the place of incision in large abscesses, and will not do much good in multiple abscesses. It is practically painless and bloodless. This or any other method should be followed after recovery by removal of the tonsil. M. P. Schuster (Texas State Journal of Medicine, January, 1912).

RINGWORM OF THE SCALP, TREATMENT OF.

The author deprecates the routine use of the X-rays in the treatment of this affection on the ground that, even in the most careful and skillful hands, certain small percentage of cases become the victims of a permanent alopecia therefrom. He advises strongly that the ionic method of introducing antiseptics into the tissues be used instead, and describes this procedure in detail.

The appliances necessary are simple, consisting merely of a small switchboard and electrodes. If a public electric supply is not available, a battery of 20 or 30 cells is sufficient. The child's head is shaved, or the hair cropped short all over. A solution of the drug to be used —1 per cent. mercuric chloride or 1 per cent. aqueous iodine solution (with potassium iodide added to make the iodine

soluble)—is rubbed well into the affected parts. Folds of lint (10 to 16 ply) are soaked in the solution, and applied *evenly* to the surface; over this the electrode is placed and secured by a few turns of bandage. The lint should overlap the diseased area and be thoroughly moistened. As electrode the author uses copper gauze. It should be large enough to cover the diseased area, and the contact between both the head and the lint, and the lint and the electrode, should be of equal pressure all over. One pole of the electric supply is attached to this electrode, and the other to a water-bath in which the child's arm or foot is immersed or to a large, well-moistened pad bound to the arm or leg. The current is slowly turned on and gradually increased until the patient is beginning to feel slight warmth on the scalp. After a few minutes the current can be increased without causing discomfort, and it is the object to increase it as much as possible short of actual discomfort. When the area under treatment is large, a child usually allows 15 to 20 milliampères to be used. Each sitting should be as prolonged as possible. The author aims at from forty to fifty minutes, being sure that one sitting of forty-five minutes with a given current is of greater value than three or four of only fifteen minutes with the same current.

The treatment should be repeated two or three times a week. It is well to have the head washed daily or every other day with an antiseptic, such as the sulphur, betanaphthol, and green soap mixture commonly prescribed. If the treatment makes the scalp irritable or scaly, a mild antiseptic oil may be used between the sittings, but it must be thoroughly removed before making ionic applications.

The average number of sittings in the author's cases was 13. For three years he has not known of a failure to cure; he has records of 53 cases in which hairs were examined and cultured after treatment, and found to be free of ringworm. J. R. Riddell (Glasgow Medical Journal, February, 1912).

SCARLET FEVER, DIAZO REACTION IN.

The diazo reaction was studied by the authors in 375 cases of scarlet fever, 56 of diphtheria, and 37 of serum sickness with various types of rashes. A positive result was obtained in the first week of the disease in 17.3 per cent. of scarlet fever and 12.9 per cent. of diphtheria patients. It is during this week that scarlatiniform serum rashes are apt to develop and make a differential diagnosis from scarlet fever quite difficult. The percentage of positive diazo reactions in serum sickness was found to be much lower. A few positive reactions were observed, averaging 10.8 per cent. for all kinds of rashes, but many of these results may have been due to diphtheria. The value of the diazo reaction in differential diagnosis, on the whole, proved slight, as the percentage of positive reactions in scarlet fever and diphtheria is already low. In measles, however, in which the reaction is positive in 75 per cent. of cases, a negative reaction in a case presenting a morbilliform rash would be of value in differential diagnosis. S. S. Woody and J. A. Kolmer (Archives of Pediatrics, January, 1912).

SYPHILIS OF THE NERVOUS SYSTEM, SALVARSAN IN.

The authors administered salvarsan in 18 cases of tabes, 7 of undoubted general paresis, 30 designated as lues cerebri or cerebrospinal lues, 14 of lues spinalis, 2 of syphilitic epilepsy, and 9 of constitutional lues with nerve symptoms such as headaches, optic neuritis, pupillary dis-

turbance, and the like. Both intravenous and intramuscular injections were used in the series. The authors, as a result of their experience, formed the opinion that salvarsan has no curative effect in tabes and general paresis; that it seems to influence favorably some of the symptoms, particularly those related to the vesical and sexual functions; that under its use some cases remain stationary; that none exhibited any unfavorable effects attributable to the drug itself, and that in the two disorders mentioned it accomplishes as much, but not any more than, was achieved in former years by the use of mercurials. In brain and spinal cord syphilis the administration of salvarsan is followed by improvement in many of the symptoms, and seems to accomplish at least as much as mercury. In the acute and subacute forms of brain syphilis, particularly in those associated with convulsive seizures and with chronic headaches, the drug proved distinctly beneficial. There is no doubt, however, but that the good effect of this treatment may be made more lasting by the additional use of mercury and the iodides. The fact must not be lost sight of that salvarsan may prove most efficient in the prevention of parasyphilitic and metasyphilitic diseases of the nervous system. That general paresis, and probably tabes, run a slower and, on the whole, a milder course than they did in former years is undoubtedly a fact. B. Sachs and I. Strauss (Medical Record, February 3, 1912).

SYPHILIS, SODIUM CACODYLATE IN.

Sodium cacodylate was used by the author in a series of 43 cases, each patient receiving from 14 to 16 injections on successive days. A fresh solution containing 4 grains (0.25 Gm.) of the drug to the dram (4 c.c.) of distilled water was prepared daily. The injections were at first made subcutaneously, then intramuscularly. The conclusion was reached that arsenic in the form of sodium cacodylate is useful in syphilis. While its action is not as rapid as that of salvarsan, it accomplishes results not unlike those of salvarsan. It is very reasonable that it should, as the arsenic content of salvarsan is 34 per cent., while that of the cacodylate is 48 per cent.

Care being taken that the salt is pure, and making a solution of it fresh every day, it is non-poisonous, even in doses as high as 5 or 6 grains injected daily for three weeks or a month, *i.e.*, the system can take in 100 grains of sodium cacodylate in three weeks without signs of arsenical poisoning. There is no albuminuria, no sign of ocular disturbance; the only untoward effects ever noticed were slight shooting pains in the muscles, particularly those of the shoulder, and occasionally a muscle-spasm. There is no reaction at the site of injection.

The drug should be used for effect, beginning with 3 grains daily and increasing as results are noted. It is cumulative in action, improvement continuing for a week or so after cessation of the injections.

The best results are seen in early syphilis. The drug has a marvelous effect on the initial lesion and on the maculoroseolar eruptions. The action on the papular syphiloderm is somewhat slower, but in large doses is effective. On the adenopathies the drug has practically no effect, enlarged cervical, epitrochlear, and inguinal glands persisting in spite of massive doses. Mucous patches and condylomata, however, clear up rapidly without any other treatment. The drug has an excellent alterative effect and can be used for that alone in

the course of the treatment of syphilis. All patients, whether their lesions were benefited or not, spoke of a sense of well-being, of added strength, of a better appetite, and even of an increase in weight. On the rupia and tertiary lesions sodium cacodylate has practically no effect.

Immediately after the patient has had his course of injections he should be placed on mercury; otherwise, the external manifestations will recur. It would even be well to alternate a course of mercurial treatment with a course of cacodylate injections. The two drugs seem to be synergistic; one has a stronger effect in the presence of the other.

The effect of sodium cacodylate on the Wassermann reaction is practically nil, but the drug should prove a useful adjunct in the treatment of syphilis, especially where salvarsan cannot be used, either for financial reasons or because of some physical condition of the patient. L. J. Spivak (New York Medical Journal, March 2, 1912).

THROAT AFFECTIONS, NOTES ON THE TREATMENT OF.

In making local applications to the throat, one should recognize, the author remarks, the so-called salpingopharyngeal folds, containing a little muscle behind the posterior pillar of the fauces; in them there is a good deal of lymphoid tissue. In some cases of pharyngeal inflammation all that is to be seen is swollen lateral bands; these may be painted by means of a swab of wool on a holder with chloride of zinc (about 15 grains to the ounce) or touched with the galvanocautery, and very good results may thus be obtained in this so-called "lateral pharyngitis." Cases of supposed "nervous cough" may be accounted for by a laryngotracheitis which has followed influenza, but often the cough is kept up by swelling of the lateral bands in the pharynx, and when this is the case surprising benefit results from painting them gently with deliquescent trichloracetic acid, followed by brushing with sodium carbonate to neutralize the acid. In acute tonsillitis brushing with menthol and guaiacol (10 per cent. menthol and 3 or 4 per cent. guaiacol in olive oil) often has a good effect.

In the treatment of tuberculosis, attention is called by the author to the continuous respirator devised by Burney Yeo for the continuous inhalation of antiseptics. One thing the author has constantly seen it accomplish in cases of laryngeal tuberculosis is to check the cough. The chief drug used is creosote, which is made more pleasant and is very effective if combined in certain ways. The author commonly orders the following:—

℞ Creosote, 3iij (12.0).
Spirit of chloroform,
Oil of Pinus sylvestris, of each, 3iss (6.0).
Oil of cinnamon,
Oil of citronella, of each, ♏v (0.3).
Menthol, gr. v-x (0.3-0.6).

J. Dundas Grant (Practitioner, Mar., 1912).

TYPHOID FEVER, NEW DIET FOR.

Good results are reported by the author from the use of a milk-free, low-nitrogen diet in typhoid fever. At the Norfolk naval hospital 175 cases, representing on admission all types and stages of the disease, were placed on the diet, with 5 deaths. As a general rule, the fever was moderate, nervous symptoms absent, flat abdomen the rule, and marked loss of flesh the exception. Hemorrhage occurred in less than 10 cases, and perforation in but 1 case. Rapid recovery of strength in convalescence was noted.

The plan of daily feeding was as follows:—

6.30 A.M. One cup hot coffee with 2 drams sugar. No cream. Two slices of zwieback or buttered toast.

8.30 A.M. One portion of Bethlehem oats or Robinson's barley, according to bowel indications, with 6 buttered crackers (saltines).

10.30 A.M. Six ounces soup. (Change recipe occasionally.)

12.30 P.M. One medium baked potato, mashed and prepared with butter. Add a large pinch of salt. Two thin slices of buttered toast (hot) and 1 cup of hot, weak tea with 2 drams of sugar.

2.30 P.M. Two teaspoonfuls of pudding, bread or tapioca (preferably the latter), and 6 saltine crackers.

4.30 P.M. Two ounces of rice, farina, or cream of wheat, thoroughly mixed with 1 ounce of butter and 4 drams of sugar. (Change from day to day.)

6.30 P.M. Three slices of buttered toast.

8.30 P.M. Six ounces of soup.

The soups allowed in the treatment are: black bean, baked bean, vegetable (carrot, turnip, celery, potato, and onion, mixed), tomato, and tapioca wine soup. All should be strained through a fine sieve.

The patient should be fed slowly with an Ideal feeding cup or spoon. Water should be given between meals, almost *ad libitum*. At the height of the fever, if the foods mentioned are distasteful, the amount should be reduced and milk-sugar added in considerable quantity. If the bowels do not need regulating and a change is desired substitute at 8.30 A.M. the following: Two heaping teaspoonfuls of cream of wheat gruel or farina, and a handful of oyster crackers.

The diet recommended meets the requirements of a minimum nitrogen equilibrium, but avoids protein maldigestion with the harmful results of the toxins therewith liberated. W. M. Garton (Military Surgeon, March, 1912).

ULCER OF STOMACH, CHRONIC, SURGICAL TREATMENT OF.

Intractable recurring dyspepsia in adult life, the author remarks, is probably often due to chronic gastric or duodenal ulcer. Where such ulcers remain unhealed, as shown by persistence of symptoms, after careful medical treatment for two to three months or longer, surgical intervention is indicated because (1) the exact duration and extent of the ulcer is unknown; hemorrhage may occur and death result; (2) perforation may be produced; (3) carcinoma may develop upon the ulcer; (4) obstruction at the pylorus may occur; (5) without surgical treatment, a still longer period of chronic invalidism will exist; (6) surgery has demonstrated that it is possible to cure a large proportion of these chronic ulcers.

The author reports 25 cases of chronic ulcer in which medical treatment had failed to cure and operation was performed. Fifteen were cases of obstruction at the pylorus or hour-glass deformity; 5 presented no pyloric obstruction; 4 were perforated gastric ulcers, and 1 was a perforated duodenal ulcer. There were 2 deaths in the group of cases; 1 from perforation of a gastric ulcer near the pylorus and 1 following partial gastrectomy among the early cases, owing to a mechanical difficulty. There were no deaths following simple posterior gastroenterostomy.

With one exception, all the operated cases have remained practically well for from one to seven years after the operation, although at least 11 of them had previously had digestive trouble for from

five to twenty-five years. The author bases upon this his plea for prompt surgical intervention in such cases, and considers that, if operation had been performed in his own cases at an earlier stage of the chronic ulceration, (1) many years of invalidism would have been avoided; (2) terminal conditions, such as pyloric obstruction, hemorrhage, and perforation, would have been avoided, and (3) probably a more rapid healing of the ulcer would have occurred than was actually the case. It is possible, in the author's opinion, to come near enough to a diagnosis of chronic ulcer to justify an exploratory operation before there is evident stasis or hemorrhage. C. L. Scudder (Boston Medical and Surgical Journal, April 11, 1912).

URINE, EUGLOBIN REACTION IN THE.

Attention is called by the author to the fact that the euglobin or nucleoproteid reaction of the urine, a well-known, but little-appreciated test, is common to all varieties of "harmless albuminuria,"—orthostatic, adolescent physiological albuminurias, etc.,—whereas in chronic nephritis it is not observed. The placing of these two facts together makes the reaction of definite value in the differentiation between harmless and organic forms of albuminuria,—not infrequently a perplexing question.

The test is performed by diluting 3 to 5 c.c. of the urine with from four to five times its volume of cold, distilled water, and adding 2 to 3 c.c. of 50 per cent. acetic acid. Without heating, where the test is positive, a diffuse cloudiness appears, which becomes more intense on standing. Recent research seems to show that the precipitate consists of a mixture of euglobin and fibrinogen, but the matter is not as yet conclusively settled. At all events, the presence of the reaction marks the albuminuria as harmless, and, as a rule, the more abundant the reaction, the better the prognosis. A. Elliott (Illinois Medical Journal, November, 1911).

VENESECTION AND SALINE INFUSIONS IN DERMATOLOGY.

These measures were employed by the author in 100 cases of various toxicodermas, such as pruritus, prurigo, urticaria, pemphigus, miliaria, certain cases of chronic eczema, etc. The aim was to treat these affections in somewhat the same way as is frequently done in sepsis, uremia, and eclampsia. The purpose being, however, chiefly to stimulate metabolic changes, removal of blood or introduction of saline in large amounts was not necessary. The blood collected at venesection amounted to 100 or 200 c.c., 300 to 700 c.c. of a 0.9 per cent. sterile salt solution being then injected through the same cannula. The procedure was repeated 3 to 6 or even more times, at intervals of five or six days. No untoward effects whatever on the kidneys or circulatory system were noted; nor was fever observed.

The best results were obtained in cases of pruritus. Possible psychic influences were eliminated by leading the patients to believe that the procedure was necessary for diagnostic purposes. Nevertheless, in each case after the treatment the itching subsided at once; subsequently a cure or at least marked improvement was noted. The method proved useful in some of the cases of urticaria, but was ineffective in psoriasis. Good results were obtained in certain cases of chronic eczema associated with itching in which various other forms of treatment, including the X-rays, had already been tried without success. Much benefit was also noted in furunculosis. J. Simon (Deutsche medizinische Wochenschrift, November 30, 1911).

Clinical Summary

Practical hints from articles and abstracts that have appeared in the Monthly Cyclopedia and Medical Bulletin during the current year.

Acne. TREATMENT. Vaccines useful for selected cases: (1) Cases with deep-seated pustules, occupying a large area; microorganisms abundant, staphylococcus greatly predominating. Autogenous staphylococcic vaccine most efficient, but must be administered over some months. (2) Cases with lesions indolent and superficial, chiefly inflamed comedones, with but little pustulation. Stock acne bacillus vaccine here gives good results in many instances. Administer 5 to 10 millions acne bacilli every week or ten days. (3) Cases combining the more and less severe lesions of the first and second groups. Use mixed vaccines of staphylococcus and acne bacillus. Other measures: Remove other etiological factors, such as reflex circulatory disturbance due to nervous strain in adolescence and digestive disorders. Correct constipation and regulate diet and mode of life. Locally, squeeze out comedones and wash often and vigorously with soap and water; if suppuration present, puncture or incise pustules, bathe with hot water, and dress antiseptically; disinfect skin and have garment worn next to affected part frequently changed; X-rays; radium for indurated nodules. *Morris and Dore.* Page 93

Acne Rosacea. TREATMENT. Where acne indurata associated, incise papules and pustules, scarify distended nasal capillaries, and apply Bier's cup for some time to individual lesions. Have patient apply hot compresses freely to face and at night following ointment: Salicylic acid, 0.6 (gr. x); precipitated sulphur, 4.0 (℥j); white petrolatum, 30.0 (℥j). *Aronstam.* 176

Adenitis, Tuberculous. TREATMENT. Röntgen rays recommended for routine use in cases that do not readily respond to medical treatment. Give ten daily irradiations, then 2 or 3 times a week. Study of proper dosage in each case necessary. Patients thus treated early can be cured without breaking down of a single gland. Where such breaking down does occur, incise, swab out cavity with equal parts of iodine and phenol, and drain. *Boggs.* 229

Anemia, Pernicious. TREATMENT. Case in a pregnant woman at term in which 4 intragluteal injections of defibrinated human blood, amounting altogether to 159 c.c., proved markedly beneficial. *Esch.* 44

Anorexia. TREATMENT. Fresh pineapple juice found useful to relieve anorexia in 150 cases, including patients with simple anemia and pulmonary tuberculosis and convalescents from malaria, nephritis, pneumonia, typhoid fever, hepatic colic, acute cholecystitis, etc. In chronic gastric diseases in general, especially alcoholic cases, considerable benefit likewise resulted. *Floersheim.* 233

Appendicitis, Chronic. DIAGNOSIS. Pain chiefly in right lower quadrant, if unassociated with attacks of epigastric pain and nausea, is seldom due to appendix; before diagnosing chronic appendicitis exclude every other possible condition.

TREATMENT. Appendectomy alone frequently does not cure. This is true especially of patients with chronic constipation; a long, dilated cecum, with other evidences of enteroptosis, is usually present. *Stanton.* 33

Arthritis, Gonorrheal. TREATMENT. Intra-articular injections of iodine tincture, 5 Gm. on the average, used in many cases of various types, with considerable success. Increased swelling at first, then cessation of joint effusion, disappearance of pain, and return of motion. *Hildebrand.* 37

Arthritis, Rheumatoid. TREATMENT. 1. Liberal diet, including plenty of animal food. 2. Guaiacol carbonate in cachets; dose at first from 5 to 10 grains *t. i. d.*, to be increased by 1 to 2 grains each week up to 15 or 20 grains. If given long enough (at least twelve months) this will in many cases arrest disease, diminishing size of joints and permitting of increased movements; it relieves pain markedly. 3. Potassium iodide in 10-grain doses, combined with the guaiacol, increases benefit; its depressing effect to be counteracted by tonics. 4. Thyroid preparations are of value in early cases associated with Raynaud-like symptoms and cramps in extremities. 5. Hot baths, superheated air, or electric light; douche masssage; peat baths or brine baths. 6. Passive movements and massage. 7. Bier's hyperemia, where affected joints few. 8. Fibrolysin followed by massage, where joints more or less fixed owing to fibroid thickenings. 9. Irrigations of colon, where arthritis secondary to chronic colitis. *Luff.* 112

Thyroid preparations useful in many cases of long-standing osteoarthritis and chronic infectious arthritis, probably because of damage to the thyroid gland resulting from its hyperactivity attendant upon continued toxemia. Slow pulse an indication of thyroid failure; emaciation does not preclude it. Dosage of dried thyroid substance ranges from 1½ grains (0.1 Gm.) once daily up to 5 grains (0.3 Gm.) *t. i. d.* in distinct myxedema. Avoid causing headache, diarrhea, or reduction of blood-pressure, and intermit drug from time to time. Thyroid medication necessary for remainder of life where thyroid failure thoroughly established. *Midelton.* 236

Asthma, Bronchial. TREATMENT. Importance of chronic coprostasis and intestinal autointoxication in etiology of asthma shown. Necessity of bowel regulation in the treatment emphasized. *Ebstein.* Page 33

Epinephrin hydrochloride found most effective drug next to morphine in treatment of the asthmatic paroxysm in 31 cases. Ten to 15 drops of 1: 1000 solution injected under or into skin give immediate relief, which is often also lasting. Blood-pressure not increased by it, but rather lowered. Stramonium cigarettes or fumes give comfort in some patients, hypodermics of nitroglycerin in but a few. Atropine safer but less sure than morphine, which should be last resort. Treatment between paroxysms: Remove reflex causes such as deflected nasal septum, sensitive point near inferior turbinates, disordered stomach, and constipation. Overcome obesity where present. Give prolonged course of potassium iodide, 10 to 15 grains (0.65 to 1.0 Gm.) three times daily, and thereafter alternate use of drug for 10-day periods with 10-day intermissions. *Lemann.* 94

Blepharitis. TREATMENT. Marginal blepharitis in children to be treated as follows: 1. Remove crusts 2 or 3 times daily with sodium bicarbonate solution (gr. x to f℥j) or, at first, with warm olive oil. 2. After careful washing rub into roots of lashes a stimulating mercurial ointment (gr. viij of ammoniated mercury or gr. iv of yellow oxide of mercury to ℥j of white petrolatum). 3. If much discharge, especially purulent, cutting of lashes will facilitate cleansing; in worst cases, epilate all lashes involved in pustules. 4. If lid much excoriated, paint 1 per cent. silver nitrate solution on surface daily. 5. Keep lids closed with wet carbolic dressing (1 to 80) for a few days in severe cases, removing it *t. i. d.* to cleanse lids; avoid entrance of solution into eye. 6. Keep child from reinfecting lids with fingers by use of lightly smoked, domed protecting spectacles, or in the very young by cardboard splints bandaged on flexor surface of elbows. 7. Prescribe correcting glasses if required, to remove cause of ocular hyperemia. *Lawson.* 103

Cholera. TREATMENT. Potassium permanganate given internally with some success. Dose, 0.4 to 0.5 Gm. (6 to 7½ grains) *per diem*, dissolved in 400 to 500 Gm. of pure water and given every half-hour. Drug continued two or three days in diminishing doses. Especially valuable in cases with hemorrhage. Iodine tincture given in 42 cases, with 34 recoveries. Dose, 40 to 60 minims daily, dissolved in 250 Gm. of distilled water, given every hour. Copious bowel irrigations with warm iodine solution or 1: 1000 potassium permanganate solution also used with benefit in violent cases. *Logotheti.* 35

Colitis, Mucous. TREATMENT. Apply to abdomen at night towel soaked in magnesium sulphate solution, ½ ounce to 1 pint of water, at 75° F. Irrigate rectum with 2 gallons of same solution at 85° to 90° F. Mucus disappears, and pain and gas formation diminish. Milk diet, with fruit, especially grapes, added, also effective; 1½ quarts of milk to be taken during day and 1 pint of hot milk at bedtime; continue for ten days to two weeks. Crude tar of *Pinus palustris*, mixed with flour and ordered in No. 2 gelatin capsules, gave good results; 2 or 3 capsules one hour after meals. *Joseph.* 42

Calumba-agar, containing solid constituents of 2 c.c. of fl. ext. calumbæ in 1 Gm. of agar, found useful in colitis with mucus in stools (*v.* Constipation). *Einhorn.* 231

In treating spastic constipation in these cases: (1) Where weakness of abdominal muscles, prescribe an elastic belt to support abdomen above pubes, especially in the obese; combine with this exercises. (2) Where feces too dry, salines, with or without agar-agar or regulin, give best results. (3) Where insomnia in early morning hours, a saline draught will often bring on sleep. (4) Where pain is present owing to slow passage of inspissated fecal material, give oxgall pills and oil enemata. (5) Cellulose in diet helps to prevent fecal accumulations, but discretion is required in its use; agar-agar should be used as a material to replace vegetable fiber. *Higgins.* 295

Constipation. TREATMENT. Hormonal, 20 c.c. injected intravenously or intramuscularly, found effective in constipation with general atony and in postoperative paresis. *Hoxie.* 170

Medicated agars considered useful. Phenolphthalein-agar, containing 0.03 Gm. of phenolphthalein in 1 Gm. of agar, and rhubarb-agar, containing 1 c.c. of fl. ext. rhei in 1 Gm. of agar, recommended. Prepared by dissolving remedy in boiling agar water solution, thoroughly mixing, evaporating to the original dry agar volume, and grinding up into flakes. Dose, 1 teaspoonful twice daily in water after meals. *Einhorn.* 231

Constipation with Diarrhea. Found in gouty patients, after abdominal and rectal operations, in pulmonary tuberculosis, in achylia gastrica, and in hypochlorhydria with gastrointestinal atony.

TREATMENT. A few (3 to 5) 2- to 5- grain doses of calomel, followed by magnesium sulphate, or sodium sulphate, or a laxative water; in other cases, castor oil in ½- to 1-dram doses 2 or 3 times daily, continued for a month. Ichthyol valuable in cases with much fermentation. Physical treatment with oil or oil-emulsion enemas, hot baths with massage, or hot wet packs changed every 15 to 30 minutes. Rest in bed. Gastric lavage. Well-prepared food. Strong, black coffee with plenty of sugar often useful; also good beer or cream; bread spread with butter and honey; stewed or dried fruit (latter soaked in water); cheese; agar-agar, etc. Modest exercise alternating with rest; salt baths, sitz

baths; sensible wearing apparel; correctly fitted corset. *Bernheim.* Page 69

Coryza, Acute. Aromatic spirit of ammonia and sweet spirit of niter recommended as best agents to "abort" a cold. *Beverley Robinson.* 47

Mixed stock vaccine composed of various strains of pneumococcus, 40,000,000; streptococcus, 30,000,000, and staphylococcus, 150,000,000, recommended in colds. Marked improvement usually apparent twelve to twenty-four hours after first inoculation. Repeat dose on second day, then, in prolonged cases, at three- to six- day intervals. Severe complications following colds prevented by vaccine treatment. In cases where catarrhal condition persists between acute attacks, *M. catarrhalis*, 100,000,000, should be substituted for staphylococcus in the vaccine. In some cases, dose has to be doubled. Inoculations made at four- to seven- day intervals for several months. *Sherman.* 291

Diabetes Mellitus. TREATMENT. Sodium perborate, applied as a powder, usually twice daily, brought about rapid healing in 3 cases of diabetic gangrenous ulcers. *Herzfeld.* 167

Diarrhea. TREATMENT. Agar medicated with astringents found useful where intestinal mucosa inflamed or ulcerated. Gambir-agar, containing solid constituents of 2 c.c. of tr. gambir comp. in 1 Gm. of agar; tannin-agar, 0.03 Gm. of tannin to 1 Gm.; simaruba-agar, 1 c.c. of tincture to 1 Gm., and myrtle-agar, 1 c.c. of tincture to 1 Gm., recommended, the last especially in diabetic cases (*v.* Constipation). *Einhorn.* 231

Diarrhea, Infantile. TREATMENT. Soy flour useful in summer diarrhea and some forms of intestinal indigestion; given in form of dilute gruel with or without addition of barley flour and later condensed milk or cows' milk. One to 2 level tablespoonfuls of soy flour to the quart suffice at first; later increased to 4 spoonfuls. Soy-bean, barley, and condensed-milk mixtures useful where, cows' milk disagreeing, there is difficulty in finding food sufficiently nutritious for child. Orange juice advisable from time to time to prevent tendency to scurvy. *Ruhräh.* 52

Diphtheria. TREATMENT. Case in which, after a cure with antitoxin, throat cultures showed abundant diphtheria bacilli three weeks after start of disease. Repeated applications to the throat of a dilute culture of *Staphylococcus pyogenes aureus*, made by inoculating 8 c.c. of bouillon with a loopful of a fresh agar growth of the coccus, led to disappearance of diphtheria organisms from throat, thus preventing the child from being a "diphtheria carrier." General condition markedly improved. No untoward effects. *Page.* 166

Eczema. TREATMENT. Alcohol useful as antiparasitic and to relieve itching. Apply 90 per cent. alcohol twice daily to and around lesions before carrying out other local measures. Good results even in rebellious cases. Applicable in all forms of eczema except those with abundant watery discharge. Continue long after affection overcome, to prevent recurrence. *Monatsh. f. pr. Dermat.* 96

Local treatment with heated air employed in 35 cases of eczema in infants, with good results. Applications made once daily for five to ten minutes; affected region then covered with olive oil. Strict dietetic measures also to be enforced. *Perlmann.* 167

Empyema. TREATMENT. Convenient method of drainage of empyema in young children described. After locating pus with aspirating needle, insert narrow-bladed knife under it and enlarge wound just above a rib enough to admit snugly a short drainage-tube of rather stiff rubber, which is held in place by a cuff of slightly larger tubing, a piece of tape slipped over it, and adhesive plaster fastening tape to skin. Connect rubber tube with glass tube passing through cork of a pint bottle and dipping in warm sterile salt solution contained in it. Raise bottle till solution runs slowly into pleural cavity, then lower, thus irrigating pleura. Change salt solution two or three times daily, or as often as necessary to keep it fairly clean. *Kenyon.* 36

Epididymitis, Gonorrheal. TREATMENT. Where preliminary pain at external abdominal ring (vasitis), put patient to bed and support scrotum by strip of adhesive stretched over anterior surfaces of thighs. For established epididymitis, support scrotum in same way, and apply to it following ointment: Mentholis, gr. xv (1 Gm.); ung. belladonnæ, gr. xx (1.3 Gm.); ung. Credé, gr. xxx (1.3 Gm.); ichthyolis, ʒj (4 Gm.); petrolati, q. s. ad ʒj (32 Gm.). If swelling of epididymis does not quickly resolve, strap testicle, as follows: Envelop affected half of scrotum in a square of gauze. Press testicle into bottom of scrotum with thumb and index finger and bind a strip of adhesive above organ, holding it down. Then pass other strips, starting at the first one, around under testicle and up the opposite side until organ is covered. Finally, secure with another transverse strip over the first. Support with suspensory. Renew strapping every other day. *Bethune.* 228

Epilepsy. TREATMENT. (1) Secure bowel movements once or twice daily. (2) Have patient drink water freely. (3) Tepid sponge bathing or brief immersion baths followed by gentle rubbing. (4) Mild exercise in open air. (5) Mixed diet, consisting of vegetables and milk in liberal amount, and also white meats; starchy foods in limited quantity; normal amount of fats. Correct digestive difficulties. (6) Bromides to be used early in disease and in sufficient amount to control seizures. (7) Sodium chloride withdrawal found an aid to bromides, though prohibition of salt should not be so radical as to cause anorexia and loss of weight. (8) Combination of sodium glycerophosphate with bro-

mides proves beneficial. (9) Thyroid extract valuable in epileptic children with arrest of development, as well as, occasionally, in other cases; to be given persistently, in small doses; after a time, it will be found bromides can be reduced or even for a while suspended. (10) Trial of pituitrin in epilepsy justifiable. (11) Symptoms preliminary to seizures, such as headache, depression, etc., indicate the prophylactic use of a saline purge, diminution of food, and increased bromide dosage. *Dercum.* Page 292

Operation justifiable: (*a*) In traumatic epilepsy with external evidence of injury; (*b*) *do.*, without evidence of injury when nature of attacks or symptoms immediately following injury indicates seat of lesion; (*c*) in Jacksonian epilepsy; (*d*) in general epilepsy where suggestion of a focal lesion may be found before or after attacks in some disturbance of motion, sensation, or reflexes. Gratifying results may be anticipated after operation in 10 to 25 per cent. of cases. *Frazier.* 293

Epistaxis. TREATMENT. Sodium perborate used with success to arrest hemorrhage in epistaxis and after adenoid operations or tonsillotomies. *Herzfeld.* 167

Erysipelas. TREATMENT. Solution of 20 drops of phenol in 25 Gm. (6 drams) of pure neutral glycerin recommended. It is painted over affected area and surrounding skin, but must not come in contact with mucous membranes. *Lodi.* 98

Solution of aluminum acetate recommended for local use in facial erysipelas (*v.* Furuncle). *Stansbury.* 227

Esophageal Carcinoma. TREATMENT. Small amounts of hydrogen peroxide solution of 1 to 2 per cent. strength, sipped at intervals of an hour, facilitate descent of food, even in late cases where rectal feeding has been resorted to. *Liebermeister.* 98

Femur, Fracture of Neck of. TREATMENT. Apply extension apparatus. Control eversion of foot as follows: Thin a medium-sized pillow along one edge and slip this under limb, reaching nearly to heel. Pin securely to bandage supporting the extension straps, roll pillow firmly against limb, and pin at its other edge. Put firm roller bandage around pillow and limb. Pillow should be adjusted to raise heel a little, avoiding pressure on it. Finally, place smaller pillow under popliteal space and fasten to the larger pillow. *Totman.* 228

Furuncle. TREATMENT. Seen early, a superficial furuncle may be aborted by inserting pointed matchstick, dipped in phenol, deeply into its center; if lesion deep, inject several drops of liquefied phenol at base of lesion. For a furuncle seen late in first stage: Scratch off central vesicle and apply a Bier cup. Dress with sterile gauze wrung from normal saline solution with 1 per cent. sodium citrate, after inserting a bit of rubber dam in opening if there be tension. Protect surrounding skin from citrate with ointment, and over citrate gauze apply waxed paper or oiled silk, covered by compress and bandage. Cupping and dressing may be repeated every four hours until slough loose, when latter is removed with small forceps. Apply citrate only three days. Also give citrate internally, 15 grains (1 Gm.) *t. i. d.* after meals. Where bluish, flabby granulations: Strap edges of wound with adhesive strips, dry granulations, mop with iodine tr., and dust with Bier's powdered silver nitrate. Snip off exuberant granulations. To promote epithelial regeneration, use 8 per cent. scarlet red ointment or amidoazotoluol. Prevent autoinoculation by shaving skin around furuncle and disinfecting with 70 per cent. alcohol, tincture of iodine with benzine, diluted liquor formaldehydi, or aluminum acetate solution. Repeat local disinfection with benzine at each dressing. Where furuncle first seen in stage of softening, incise and drain; latter may be assisted with a Bier cup. For very large lesions or in furuncles of face, inject 3 per cent. novocaine under base, wait five minutes, and remove core from tumor with small curette. Where supposed boils become carbuncles, excise the whole area, controlling bleeding with cautery and compresses, and apply pure liquefied phenol. For recurring furunculosis: Bacterin therapy with killed staphylococci; initial dose, 100 million bacteria, increased by weekly doses up to 1 billion. Yeast also useful. *Skillern.* 99

Solution of aluminum acetate recommended for local use. Made with aluminum sulphate and acetic acid, of each, 300 Gm.; calcium carbonate, 130 Gm.; distilled water, 1000 c.c. For use, dilute with distilled water, 1 to 7 or 10, and apply to parts on several thicknesses of gauze, covered with rubber tissue or oiled silk, and a loose bandage. Addition of ¼ volume of alcohol or glycerin to solution avoids wrinkling and whitening effect on skin. *Stansbury.* 227

Gastric Dilatation. DIAGNOSIS. Vomiting, abdominal pain, distention, constipation (occasionally diarrhea), collapse, splashing sounds, and peristaltic movement over stomach, appearing suddenly in the course of pneumonia, should at once suggest acute gastric dilatation.

TREATMENT. 1. Introduce stomach tube and practise lavage as often as distention occurs, even in cases with collapse. 2. Turn patient on right side or face. 3. Interdict food and drink by mouth. 4. Strychnine and eserine hypodermically apparently useful in some cases. *Fussell.* 107

Gastric Neuroses. TREATMENT. Condition nearly always associated with gastric atony and vertical "fish-hook" stomach. 1. Relief from pain (due to hyperacidity) obtained by recumbent position on right side or knee-chest posture for several minutes at short intervals after meals. 2. Peristalsis

assisted by massage or having patient clasp left knee and make strong intermittent pressure of thigh against abdomen while lying halfway between prone and lateral position. 3. Helpful suggestion. 4. Abundant nourishment in small quantities at short intervals. 5. Attention to any existing anemia. Rational non-surgical treatment effective in majority of cases. *Greene.* Page 174

Fresh pineapple juice found useful to relieve anorexia. *Floersheim.* 233

Gastric Ulcer. DIAGNOSIS. Rice, milk, potatoes, and prunes cause positive reaction in benzidine test for occult blood in stomach contents, and hence must be excluded from diet before test is made. *Floersheim.* 105

Watermelon pulp found to cause positive reaction in guaiac-turpentine test for occult blood in feces. *Newbold.* 106

Gonorrhea, Acute. TREATMENT. Method causing arrest of suppuration in three to five days described. Inject 5 to 15 c.c. (¼ to 4 drams) of 0.25 per cent. protargol solution into urethra every half-hour in daytime and every hour at night. To be retained two to ten minutes, during which time urethra is gently massaged from behind forward. Increase strength of solution gradually. Patient should ingest large amount of fluid, in order to be able to urinate before each injection. Continue injections, given as often as possible, two or three weeks after cessation of pus. Then alternate protargol with lead acetate and zinc sulphate, of each, 0.3 Gm. (2 grains) in 200 Gm. (4⅔ ounces) of water. *Kuhn.* 37

Gonorrheal Cervicitis and Endometritis. TREATMENT. I. Acute cases: 1. Confinement to bed. 2. Keep emunctories active. 3. Limit diet. 4. Cleanse vagina frequently with large amounts of hot saline solution or hot water containing boric acid or a weak iodine solution. Use irrigator with nozzle projecting a straight forcible stream, and pinch mucous membrane of introitus around nozzle, to flush cavity satisfactorily. Intrauterine measures and pelvic operation intervention contraindicated. II. Subacute cases: 1. Soften and dilate cervix with Goelet's uterine electrodes and galvanic current. 2. Flush uterine cavity with hot iodine solution, 1 dram (4 c.c.) of the tincture to a quart of water, or silver nitrate, 1: 5000. 3. As condition improves, substitute daily intrauterine injections of iodized phenol (equal parts of iodine tincture and phenol) or 1 per cent. silver nitrate. Use syringe with long pliable nozzle, with its tip wrapped with cotton; inject fluid into cotton and withdraw syringe. Insert iodine-glycerin tampon (1 dram to 4 ounces), which patient is to remove next morning. Remove cotton within uterus at next visit. III. Chronic cases: 1. Puncture, evacuate, and sterilize diseased Nabothian glands. 2. Touch opened glands and erosions about os with pure iodine tincture. 3. Intrauterine irrigations and injections as above, three times weekly. 4. Curettage of uterus, thoroughly scraping internal os and cervical canal, followed by swabbing with iodine tincture and appropriate after-treatment. *Dannreuther.* 100

Gout. TREATMENT. Radium emanations used in 400 cases of gout and chronic arthritis. Patient in closed radium room for 24 to 36 sittings of two hours each. Injections of soluble radium salts near involved joints given in addition; also superheated air, electric light, and brine baths. Absolute rest in bed an adjuvant. Out of 50 cases in which blood was examined before and after treatment, uric acid disappeared in 37 instances, synchronously with marked amelioration. Cases in children particularly benefited, but cases of senile tuberculous and syphilitic arthritis and cases of very long standing, with marked joint changes, not suited for radium treatment. Low purin diet should also be tried for a few weeks or months; if ineffective, replace it by simple mixed diet, with as much of green vegetables and fruit as possible. *Gudzent.* 95

Hay Fever. TREATMENT. Calcium creosote solution diluted with 8 to 10 parts of water recommended; throat and nasal fossæ to be sprayed every hour or two for two or three days. Potassium iodide, 5 grains *t. i. d.*, effective in hay asthma; arsenic may be added with advantage. *Kolipinski.* 77

Mixed staphylococcus, pneumococcus, and streptococcus vaccine given at three- to four-day intervals with pronounced benefit. Some cures after 3 or 4 inoculations (*v.* Coryza, Acute). *Sherman.* 291

Hematuria, Essential. TREATMENT. Permanent relief usually obtained by renal decapsulation or nephrotomy. Before this is employed, tuberculin should be tried as well as, usually, turpentine or other medicinal measures. *Babcock.* 257

Hemophilia. TREATMENT. Bleeding from wound in a hemophilic boy, previously uninfluenced by any remedial agent, checked by allowing blood from finger of a normal individual to drop on the wound. A clot formed immediately. *Sayer.* 168

Hemorrhoids. TREATMENT. Injection method used in 55 cases with satisfactory results. After suitable preparation, place patient on left side, with knees flexed. If tumor presents, apply compress soaked in 2 per cent. phenol to it and allow to remain two or three minutes; if not, use rectal speculum. Solution to be injected into pile consists of equal parts of phenol, glycerin, and sterile water, and of this 2 to 4 minims (0.12 to 0.25 c.c.) are used, according to size of growth. After injection tumor should be forced back above sphincter, and patient recline for next six hours and abstain from straining, etc. If prolapse should occur, pile should be returned at once and hot compresses frequently applied. Pain after

operation may be relieved, if necessary, with a few 2½-grain (0.15 Gm.) tablets of Dover's powder, though it is rarely severe. Inflammation of pile occurred in 3 cases of series. After disappearance of tumor a small ulcer may remain, which will rapidly heal on applying silver nitrate solution (10 or 15 grains to the ounce) every two or three days. *Wilkinson.* Page 168

Hepatic Affections. TREATMENT. Combination of sodium salicylate and sodium benzoate found useful for cholagogue and "flushing-out" effects in various disorders, especially suppurative angiocholitis, cholecystitis, and lithiasis. Sodium salicylate induces flow of concentrated bile; sodium benzoate, of dilute bile. Relative amounts of two salts to be varied according to indications. Formula suggested: Sodium benzoate, 0.75 Gm. (12 grains); sodium salicylate, 0.5 Gm. (8 grains); sodium borate, 0.25 Gm. (4 grains); rhubarb, 0.3 Gm. (5 grains); to be taken *t. i. d. Polain-Cartier.* 38

Hernia, Inguinal. TREATMENT. In infants use truss; to be kept applied continuously. After two years, if hernia still persists, urge radical cure, if possible. *Campbell.* 169

Hip-joint, Congenital Dislocation of. TREATMENT. Manipulative method used in 33 cases. If used at earliest possible time after infancy, the method may be expected to yield stable articulation with perfect function in 60 to 70 per cent. of cases; in remainder condition is usually much improved. Attended by little or no danger in children below 8 years of age. *Simpson.* 38

Hodgkin's Disease. TREATMENT. Röntgen rays cause prompt reduction of glands. Whenever recurrence is manifest, renew the treatment. External tumors can thus be controlled a long time, or until patients succumb to deep involvement. *Boggs.* 229

Hyperchlorhydria. TREATMENT. Rhubarb and soda, or rhubarb and magnesia, either in mistura rhei et sodæ or in Gregory's powder, useful in gastric disorders with fermentation or hyperacidity. *Beverley Robinson.* 47

Hyperidrosis. TREATMENT. For sweating feet: Bathe them every night with 1 per cent. potassium permanganate solution and dry thoroughly. Next morning dust on following powder: Potass. permang., ℥ij (8.0); alumin. pulv., gr. xx (1.25); talc. pulv., ℥j (32.0); zinci carbonat. et oxid., of each, ℥ss (16.0); or else, have patient wear white stockings previously soaked in saturated boric acid solution. Where bromidrosis, use dilute formalin. For sweating in axillæ: Bathe with weak vinegar, and apply following powder on gauze pad: Acid. salicyl., gr. xx (1.25); amyli pulv., ℥ij (8.0); alumin. pulv., q. s. ad ℥iss (48.0); or else, use following lotion: Betanaphtholis, ℥j (4.0); glycerini, ℥ij (8.0); alcoholis q. s. ad ℥iiss (80.0). Where persistent bromidrosis, short exposures to X-rays may be effective. *Meachen.* 177

Hyperthyroidism. DIAGNOSIS. Elevation of temperature found an early symptom in many cases, especially mild ones. When, in absence of acute or other tangible disease, there have been loss of weight and augmented nitrogen and phosphoric acid excretion, and when, after administration of a thyroid or iodine preparation, there occur the characteristic psychoneurotic and cardiac symptoms of excessive thyroid activity, elevation of temperature is a thyrotoxic phenomenon. *Stern.* 39

Hypothyroidism. DIAGNOSIS. Blood showing mild leucocytosis and relative lymphocytosis with eosinophilia from 3 per cent. up is highly suggestive of thyroid insufficiency. *Collins and Kaplan.* 40

Inertia, Uterine. TREATMENT. In secondary inertia and where pains ineffective owing to hydramnios or twin pregnancy, intramuscular injection of pituitary extract is indicated. May also be employed in febrile states. Where complications expected after birth, inject pituitary extract a few minutes before end of second stage. Where used in first stage, time to inject is when os is a little less than size of palm in primiparæ, and when it will just admit 2 fingers in multiparæ. *Jaeger.* 234

Intertrigo. TREATMENT. In infants acute enterocolitis, frequently the cause of intertrigo through the irritating discharges, should be overcome by dieting: stop milk; give rice, arrowroot, or albumin water, with plenty of pure water to allay thirst. Internally, give sodium phosphate, 5 to 10 grains (0.3 to 0.6 Gm.) every morning for two or three days, usually followed by castor oil, 1 dram (4.0 c.c.). Locally, soak parts with oatmeal water. Give an oatmeal bath, by soaking bag filled with oatmeal in tub filled with boiling water for one-half hour, then allowing to cool to 100° F. and giving child hip bath. Then use following salve: Calamin and zinc oxide, of each, 3 parts; petrolatum, 50 parts. Dust parts with cornstarch or wheat flour. Use salve three times daily, previously cleansing parts with olive oil, if necessary. *Fischer.* 170

Intestinal Paresis, Postoperative. TREATMENT. Pituitary extract used in 21 laparotomy cases. Dose, 16 minims (1 c.c.), commenced six hours after operation and repeated every few hours until 18 doses given. All patients passed flatus freely within a few hours, and were free of pain and distention. In all cases but 2, bowel action was obtained after a simple enema. Three intramuscular injections of 1 c.c. each recommended during first twenty-four hours as routine practice in laparotomy cases. Pulse rate remains much lower than usual. *Bidwell.* 44

Jaundice, Catarrhal. TREATMENT. Cold

injections of water or normal saline solution recommended, favoring biliary flow by promoting peristalsis. *Polain-Cartier.* Page 38

Laryngitis, Acute. TREATMENT. Freshly powdered cubeb, taken frequently and in moderate amount dry on tongue, found of service in acute throat disorders. *Beverley Robinson.* 47

Lupus. TREATMENT. Pfannenstiel's method found useful in lupus of nasal mucous membranes. Give patient 45 grains (3 Gm.) of sodium iodide daily, divided into 6 doses. Every morning cleanse nasal cavity of crusts with nasal douche containing sodium chloride and boric acid, and, after drying, insert tampon of sterile gauze, in contact with affected parts. Have patient keep tampon constantly moist with 2 per cent. hydrogen peroxide solution. Free iodine is thus liberated from iodide excreted by nasal mucosa, exerting its effect on lesions. In early cases ulcerations heal in one to three weeks. *Sequeira.* 102

Malaria. DIAGNOSIS. Intensely black blood-pigment in the urine considered a pathognomonic sign of malaria. Centrifugalize urine in a clean tube for five minutes and examine drop from bottom under high power. Pigment appears in very fine granules, almost always grouped; somewhat larger granules; large polymorphous masses, and granules inclosed in hyaline plaques or leucocytes. *Urriola.* 232

Mastoiditis. DIAGNOSIS. A small mastoid process with thick outer cortex and small antrum is especially subject to "atypical" mastoiditis, condition escaping detection until serious complications appear. Suspicious symptoms in such cases are: 1. Discharge from ear more profuse than one would readily expect from middle ear alone and continuing profuse for two or three weeks. 2. Increased swelling of posterosuperior wall of external auditory canal. X-ray found useful for early diagnosis in a number of cases. *Crockett.* 41

Blurring of outline of tip of mastoid elicited by grasping both mastoids anteriorly and posteriorly between fingers and noting difference of definiteness of outline on the healthy and abnormal sides found valuable as corroborative evidence in early, doubtful cases of mastoiditis. Swelling from otitis externa may be confusing, but this is usually reduced in a few days by local treatment and ice-bag, while blurring of mastoid remains. *Alderton.* 104

Melæna Neonatorum. ETIOLOGY. Condition ascribed to oral infection; "mouth-cleansing" after birth considered inadvisable, giving chance for introduction of organisms. TREATMENT. Desperate case saved by injections of human blood-serum, doses of 20, 18, 10, 6, 18, 14, and 6 c.c. being given in four days. Method of securing serum was ordinary venesection (after careful skin cleansing), serum being allowed to separate spontaneously from clot in ¼-liter flasks. Injections made with antitoxin syringe anywhere from scapulæ to buttocks. *Nicholson.* 172

Movable Kidney. TREATMENT. New operation described in which strip of transversalis fascia is passed beneath an elevated portion of the kidney capsule and sutured to spinal attachment of fascia. Usual sutures through renal poles and quadratus lumborum also put in. *Bell.* 294

Nasal Accessory Sinuses, Inflammation of. TREATMENT. In acute cases: 1. Calomel followed by a saline, then by diaphoresis with hot lemonade. 2. Liquid diet. 3. Acetylsalicylic acid or hexamethylenamine, to reduce suppuration. 4. Atropine sometimes valuable, but to be used with care. 5. Locally, application with cotton swab of 2 per cent. cocaine solution, followed by epinephrin, then by 4 per cent. antipyrin. Spray of epinephrin in alkaline medium every two or three hours. 6. After thorough contraction of mucosæ, clear opening of sinus or sinuses with swab and irrigate nose gently with warm saline solution containing a little sodium bicarbonate. 7. Oily spray of menthol and camphor. 8. Mild suction with exhaust bulb or Brawley apparatus. 9. Leucodescent lamp to relieve discomfort. 10. Hot applications. 11. Irrigation of sinuses (difficult, sometimes impossible without removal of bone). If condition unrelieved in a few days, operation. In subacute cases, same treatment + autovaccines. Latter also useful to hasten recovery in acute cases. *Miller.* 173

Nephritis. TREATMENT. Mild forms of nephritis probably often recover after renal decapsulation (doubtless some of these would recover under medical measures). In a case of acute interstitial nephritis with miliary abscess formation, patient recovered apparently because of decapsulation and scarification of cortex. Patients with high-grade parenchymatous change may be given a respite for six months to several years, but their symptoms will probably eventually recur; in such cases, a secondary decapsulation is to be considered. In parenchymatous nephritis with marked general edema, relief is generally so transient as to make operation of questionable value. *Babcock.* 257

Nervous Affections. DIAGNOSIS. External malleolar reflex (Chaddock's sign), indicating involvement of pyramidal tracts, found in 20 cases to be equal in value to the extensor plantar reflex (Babinski). It is more delicate, appears earlier, and often lasts longer than the Babinski. Consists of irritating outer side of foot below external malleolus with nail file; if positive there occurs dorsal extension of toes. *Ingram.* 95

Otitis Media, Acute. TREATMENT. Relation of acute pharyngitis, nasal-sinus, middle-ear, and mastoid inflammations to an "active autotoxic state" of the system emphasized. Calomel in $\frac{1}{10}$-grain (0.006 Gm.) doses, fre-

quently repeated up to 1 or 1½ grains, found valuable to stimulate defensive powers of body and shorten convalescence. Used in combination with local treatment. Calomel, followed by castor oil or salines, given every other day. *Snow.* Page 42.

Pain, Local. TREATMENT. Combination of menthol and methyl salicylate in hydrated wool-fat, covered with cotton and gauze bandage, recommended to relieve local pain where skin is intact. *Beverley Robinson.* 47

Paralysis Agitans. DIAGNOSIS. New sign, present in the early period of rigidity, when diagnosis difficult, described. Consists of a "cog-wheel," intermittent resistance felt when examiner grasps wrist with one hand, steadies arm above elbow with the other, and makes rapid flexion and extension of arm. Never found present in other diseases. *Moyer.* 176

Paralysis, General. TREATMENT. Salvarsan administered intravenously in a case of paresis in maniacal stage, with marked improvement. *Holland.* 73

Two cases reported in which salvarsan was of distinct benefit. *Daland.* 298

Placenta Prævia. TREATMENT. Absolute quiet, rupture of membranes when required, and irrigation with hot water recommended. Water should be at 45° to 48° C. (113° to 118° F.), and at least 7 or 8 liters of it should be used. Repeat irrigation if necessary to check hemorrhage. Seventy cases thus treated without a death. Infection from tampon and mishaps in version or introduction of bag thereby avoided. When hemorrhage arrested, spontaneous expulsion of fetus to be patiently awaited. Instrumental dilatation contraindicated. *De Bovis.* 44

Plague, Bubonic. TREATMENT. Early crucial incision into the swollen glands employed in 62 cases, with 54 recoveries. Causes immediate improvement in patient's condition, temperature being lowered and headache alleviated. Wounds dressed with iodine lotion, 1 dram to the ounce of water. *Nesfield.* 45

Pleuritis. DIAGNOSIS. X-ray studies showed that location of fluid in chest in serofibrinous pleurisy depends upon the position assumed most constantly by patient during acute stage, and that exudates of this type are but slightly, if at all, mobile. These facts are of assistance in differentiation of serofibrinous from other varieties of effusion. *Engelbach and Carman.* 106

Pneumonia, Lobar. TREATMENT. Creosote inhalations and moderate bloodletting, especially with leeches, recommended. *Beverley Robinson.* 47

Stock pneumobacterins, in doses of 25 to 600 millions, used in 20 cases, with 15 per cent. mortality; 30 other similar cases, under usual methods of treatment, showed 40 per cent. mortality. In some of the cases, strikingly prompt benefit followed use of bacterins; in others results were less marked or *nil*. Results seemed more definite with the larger doses. Dosage can be adjusted according to clinical phenomena; where malaise, headache, chilliness, or definite rigors, with rise of temperature, follow an injection, it is unwise to increase dose. *Robertson and Illman.* 107

Intramuscular injections of quinine and urea hydrochloride used in 192 cases of lobar and lobular pneumonia; mortality 12 per cent. Initial dose, 15 to 25 grains (1 to 1.6 Gm.), repeated in three or four hours, and perhaps once or twice again in first twenty-four hours. Same plan on second day of treatment, and on third, if necessary. Smaller doses, 5 to 10 grains, then sometimes continued by mouth. Results: Temperature and pulse rate gradually fall, respiration more rapidly; termination by lysis in five to twelve days. Procedure in injecting: Paint skin with iodine tincture, fill syringe with 50 per cent. solution of the quinine salt in sterile water; inject deeply into a muscle, emptying syringe thoroughly; withdraw needle, and seal puncture with collodion; no local ill results. Additional treatment: The usual hygienic and drug measures; saline infusion; sodium bicarbonate or ammonium compounds in sufficient amount to keep urine alkaline; tincture of ferric chloride when quinine withdrawn. *Solis-Cohen.* 235

In cases with blood-pressure below 110 mm. Hg and other symptoms of vasomotor paresis present (pulse soft, cyanosis not prominent, extremities warm), epinephrin in 10-minim (0.6 c.c.) doses of 1: 1000 solution should be given intramuscularly, even before signs of pulmonary edema appear. If latter develops suddenly, give 15-minim (1 c.c.) doses every twenty minutes for 4 to 6 doses or until the symptoms are controlled; repeat series of injections later if required. In pulmonary edema accompanying dilatation of heart due to toxic degeneration of muscle or added to the myocarditis of old persons, however, epinephrin will accentuate the dilatation, and is contraindicated. These cases are differentiated by fact that blood-pressure is high,—125 to 170 mm.,—cyanosis is marked from the start, extremities are cold, first heart-sound loses muscular quality, and pulse is small, of high tension, and irregular in frequency and size; physical examination may reveal cardiac enlargement, with descent of apex. *Brown.* 297

Pneumoperitoneum. DIAGNOSIS. In presence of free gas in peritoneal cavity, there occurs a concentric diminution of area of hepatic dullness, *i.e.*, dullness disappears at same time from upper border of liver downward and from lower border of liver upward. In tympanites, on the other hand, liver dullness disappears from below upward only. This distinction found useful in early diagnosis of perforation in typhoid fever. *Berg.* 108

Pneumothorax. DIAGNOSIS. Positive coin test, displacement of heart, and, in right-sided cases, displacement of liver are the most important diagnostic signs, occurring in about 90 per cent. of cases. Succussion splash and metallic tinkle occur in 30 or 40 per cent. *Cronice.* Page 46

Poliomyelitis, Acute. ETIOLOGY. Poliomyelitis is propagated by dust. Nasopharynx is probably point of entry. *Neustaedter and Thro.* 46

DIAGNOSIS. Lumbar puncture shown to be valuable in distinguishing poliomyelitis of meningeal type from acute cerebrospinal meningitis. Negativity of cerebrospinal fluid in poliomyelitis diagnostic; in meningitis, fluid shows marked turbidity, coarse clot formation, great excess of albumin, copious deposit of polymorphonuclear cells, and meningococci. *Forbes.* 46

Importance of thoroughly cleaning out alimentary canal at earliest period of disease emphasized; copious enemata high up found useful. Retention of urine may also require treatment with warm baths, hot compresses to abdomen, or, ultimately, catheterization. *Bogardus.* 175

Postnasal Catarrh in Children. TREATMENT. If condition acute, paint throat several times daily with boroglyceride, or, in older children, spray with a ¼ grain to the ounce solution of tartrated antimony while patient inspires deeply. Later, add an equal amount of glycerite of tannin to the boroglyceride. Where painting throat resisted, instill into nostril several times daily, while child lies back with head on pillow, a solution of 5 to 10 grains of resorcin to the ounce of saline solution, 10 grains of boric acid to the ounce of water, or 15 grains of sodium bicarbonate to the ounce. As redness of pharynx fades, apply pure glycerite of tannin or a paint of 12 grains of iodine and 15 grains of potassium iodide to the ounce of glycerin, with 5 drops of oil of cinnamon or peppermint. After all redness gone, use an astringent iron paint of 1 dram of the stronger iron perchloride to an ounce of glycerin. For anorexia: an iron tonic; stay in country or at seaside. Keep child well protected from cold for some time after. *Eustace Smith.* 34

Psychoses. TREATMENT. Seven cases—4 in children—reported in which pronounced mental disturbances were shown due to dental impaction, alveolar abscess, or other conditions affecting teeth, and cure or great improvement resulted upon remedying these states. Importance of X-ray examination of teeth and jaws in psychoses emphasized. *Upson.* 129

Puerperal Sepsis. TREATMENT. Intravenous injections of mercury bichloride used in 11 cases, with 6 recoveries. Measure considered worthy of trial in severe cases. Twenty drops of a 1 per cent. solution injected once or twice daily; 1 to 4 grains of bichloride used during the treatment. Precautions necessary: 1. Teeth to be carefully cleansed. 2. Salines to be omitted during treatment. *Stowe.* 110

Outdoor treatment of severe puerperal infections found usually to bring about rapid improvement and to lower mortality by nearly 20 per cent. Sunlight as important as air. Patients kept out of doors on a wheel bed, to be moved in again when necessary. General condition strikingly well maintained in the prolonged pyrexias. Other measures: Iron, arsenic, strychnine, alcohol, fluids copiously by mouth, saline enteroclysis in severe cases, alcohol and cold sponge baths for pyrexia, hot or cold applications for abdominal pain and distention. Curettage contraindicated, increasing mortality 10 per cent.; local treatment to be limited to a single intrauterine douche of sterile salt solution. *Young and Williams.* 236

Raynaud's Disease. TREATMENT. Apply liquid ichthyol in 10 per cent. strength locally. Internally, large doses of potassium iodide are very beneficial. Rest in bed and hot applications of some antiseptic solution to the affected members are useful. Where gangrene, amputation may be all that is necessary, but healing is tedious. *Beck.* 298

Renal Traumatism. TREATMENT. After crushing injuries of renal substance spontaneous repair is usual. Operation should not be done unless there is evidence of intraperitoneal leakage, progressive hemorrhage, urinary extravasation, or sepsis. *Babcock.* 257

Rheumatism, Acute Articular. TREATMENT. *Streptococcus pyogenes* vaccine used in 6 cases, in 4 of which no salicylates were given, with good results. Temperature quickly fell in every case, pain ceased, and inflammatory phenomena disappeared. Stock vaccine from several strains of streptococcus used in these cases, but author thinks it preferable to employ a mixed streptococcus and staphylococcus (*aureus* and *albus*) vaccine. *Wolverton.* 48

Rheumatism, Chronic. TREATMENT. In rheumatic conditions associated with anemia and in sore throat of rheumatic origin, following mixture recommended: Dissolve 1 dram (4 Gm.) of sodium salicylate in 2 ounces (60 c.c.) of water. Add liquor ferri perchloridi, plus an ounce of water, giving dark purple mixture. Then add 1 dram of potassium bicarbonate dissolved in 1 ounce of water, and fill up bottle to 8 ounces with water. *Drinkwater.* 51

Lime-poor diet found useful in certain forms of subacute and chronic arthritis, especially deforming arthritis, cases with joint pains following acute polyarthritis, and cases of chronic spinal ankylosis. Cases should be selected by test-diet, to make sure of calcium retention, as other patients will not respond to the treatment. Articles of food allowed in

lime-poor diet: White or aleuronat bread, rice, tapioca, wheat flakes, sago, tomatoes, mushrooms, white of egg, meat bouillon, beef, calves' liver, tongue, sweets, vegetable fats, light beer, carbonated waters, port. Distilled water to be used in preparation of food. After six or eight weeks restrictions may be somewhat relaxed. *Hirschberg.* Page 110

Rhus Poisoning. TREATMENT. Aluminum acetate solution recommended for local application (*v.* Furuncle). *Stansbury.* 227

Ringworm, Eczematoid. Fifteen cases studied. Three main types: (1) Acute vesiculobullous, bursting out suddenly like acute vesicular eczema; exudation into vesicles and bullæ commonly pinkish, owing to blood. (2) Chronic intertriginous of the toes; white masses of epithelium between toes with definite margin and slight vesiculation at dorsal edge of interphalangeal skin; intense itching. (3) Chronic hyperkeratotic of soles and palms, with overgrown horny layer and scattered small indolent pustules. DIAGNOSIS microscopic; demonstration of *Epidermophyton inguinale*, an ectothrix, or other organism. TREATMENT. Ointment of 5 per cent. benzoic and 3 per cent. salicylic acids in soft paraffin and cocoanut oil. For feet and hands can increase strength up to 1 dram benzoic and ½ dram salicylic acids to ounce. Where this fails, use 1 dram of chrysarobin in equal parts of chloroform, alcohol, and acetone to the ounce; apply on rising, pulling socks over it as soon as dry; wash off at bedtime. *Whitfield.* 96

Sciatica. TREATMENT. Where acute attack, in spite of the usual measures, persists longer than ten to fourteen days, sulphur baths or hot carbon dioxide baths (102.7° to 104° F., and lasting twenty minutes) should be employed, or heat applied in other ways. If ineffective, author counsels treatment by injections of saline solution and air: 1. Injection of 800 to 1000 c.c. of air, filtered through cotton, under skin on outer aspect of leg. 2. Injection of 60 to 80 c.c. of 0.8 per cent. salt solution, with 0.01 to 0.02 Gm. of novocaine added, just below sacrosciatic notch, as close to nerve as possible. 3. Injection of 10 to 20 c.c. of salt solution, with 0.01 Gm. of novocaine into epidural space of inferior lumbar region, needle being passed in and up through coccygeal notch; preliminary anesthesia of course of injection with novocaine. 4. Where very severe pain and contractures of lumbar muscles, injection of 10 to 15 c.c. of salt solution between third and fourth lumbar vertebræ into epidural space. Injections to be repeated at intervals of three or four days, substituting 1 to 1.2 per cent. for 0.8 per cent. saline. Two to five series of injections cure obstinate cases. *Sicard.* 114

Semilunar Cartilage of Knee, Dislocation of. TREATMENT. Mold piece of sole leather 4 inches long and 1¾ inches wide to inner side of knee, first soaking it in water and cutting edges smooth. Fasten over the displaced cartilage by adhesive straps—2 vertical, 1 horizontal, and 1 oblique—and cover with fairly firm bandage. Patient may walk as usual, notwithstanding soreness. Bandage renewed every ten days. After 3 such treatments condition is well, an aseptic adhesive inflammation having taken place, and only a bandage need be used. *Chandler.* 171

Sinuses. TREATMENT. Following paste used with success in treating a discharging sinus in a breast cancer, after Beck's paste had failed: Bismuth subnitrate, 30 Gm. (1 ounce); petrolatum, 60 Gm. (2 ounces); white wax and paraffin, of each, 5 Gm. (80 grains), and iodine tincture, 2 Gm. (30 minims). The tincture is added after other ingredients mixed. Paste to be stirred when used. Where large amount to be employed, diminish proportion of iodine. *Green.* 177

Skull Depressions at Birth. TREATMENT. Persistent firm pressure with fingers of both hands upon bone surrounding depressed area found effective, causing depressed bone to snap back to normal position. *Hoffmann.* 102

Small-pox. TREATMENT. Mixture of 10 per cent. iodine and 90 per cent. glycerin painted over pustules 2 or 3 times daily in 85 cases; caused drying of lesions and arrest of tissue destruction, and prevented pock-marks. Pustules on face may be opened with sterile instrument and touched with iodine tincture. Desquamation frequently almost completed in four to six days. All cases recovered. *Rockhill.* 115

Splanchnoptosis. TREATMENT. Simple method of supporting viscera described: Shave hair from lower abdomen; place strip of zinc oxide adhesive plaster 2 to 2½ inches wide by 5 to 6 inches long across extreme lower abdomen; attach to each end of it a bandage of same width to reach around body above iliac crest and be fastened behind; have bandage well padded with cotton. Avoid skin irritation by plaster by removing it occasionally, cleansing skin, and using a dusting powder. Improve general and local muscular tone by means of massage, electricity, treatment of gastrointestinal tract, correct living, and suitable diet. *McCaskey.* 238

Sterility. TREATMENT. Case of sterility, with azoöspermia, due to bilateral gonorrheal epididymitis eleven years before, in which bilateral epididymodeferential anastomosis proved curative, spermatozoa reappearing about a year after the operation. *Delbet.* 98

Syphilis. TREATMENT. Salvarsan given intravenously in 10 pregnant women in doses of 0.5 Gm. and subcutaneously in 8 newborn infants in doses of 0.03 Gm. Injections in women in dose mentioned found to be not without danger to fetus, pronounced weakening in heart-sounds being noted in days suc-

ceeding injection in one-half the cases. Child of a mother given first injection of salvarsan five and one-half months before parturition was born healthy; a child born seventy-two days after salvarsan injection was syphilitic. In the newborn, salvarsan was found to act promptly on pemphigus and to cause disappearance of spirochetæ from lesions; it is capable of producing prompt and lasting recovery from hydrocephalus of syphilitic origin. Smaller doses now advocated by author: 0.2 Gm. for pregnant women, repeated in six days; 0.01 for newborn infants, repeated twice or thrice at six-day intervals. *Bar.* Page 49

Emulsion of salvarsan in lanolin oil found a satisfactory mode of administration in 30 cases. *Burke.* 50

Case of advanced cardiovascular syphilis, in association with greatly enlarged liver and glycosuria, under treatment for nine months, in which, while Wassermann reaction was but slightly influenced, glycosuria disappeared permanently, even though sugars and starches were given freely; liver returned almost to normal size and circulation was greatly improved. *Daland.* 298

Tabes Dorsalis. TREATMENT. Salvarsan administered intravenously in 4 cases, along with hydrotherapeutic measures, with striking improvement. *Holland.* 73

Two cases reported, under treatment for over a year, in which lancinating pains were controlled, muscular inco-ordination improved, and Wassermann reaction became negative. *Daland.* 298

Tachycardia, Paroxysmal. TREATMENT. Attack of tachycardia in a woman relieved as follows: Patient being seated, physician's right hand was placed flat over heart, left hand on back, and patient directed to take deep breath, close glottis, and fix strongly walls of chest. Chest walls were then squeezed with some force, attempting to exert pressure on upper part of heart. Immediate relief and fall of pulse rate from 220 to 110. *Rich.* 233

Tetanus. TREATMENT. Phenol injections used in 5 consecutive cases, all recovering; 2 other cases treated with antitoxin died. Ten minims of 10 per cent. solution of pure phenol in sterile water, diluted to 30 or 40 minims, injected deep into muscles, at first every three hours, later at longer intervals as improvement appeared. Injections made into buttocks, deltoids, or pectorals. No untoward results. Urine, however, should be watched for smoky color, as a precaution. Severity of convulsions always diminished by the treatment, sometimes after third or fourth dose. In fully developed cases, second dose to be given one hour after first. Original wound to be excised or cauterized, as usual, with strong solutions of phenol, silver nitrate, or nitric acid. *Kintzing.* 115

Tetany. TREATMENT. Removal of whey from food given to infants with tetany found advantageous. Suspension of curds of wheyless milk proved useful as food. Best prepared as follows: Bring milk to a boil, then cool to 107° F. Add chymogen, 1 dram to the quart, and keep at 107° for half an hour. Strain through cheesecloth and allow to drain an hour. Finally, put curds through fine-meshed sieve, and suspend in a solution of arrowroot flour (1 level tablespoonful to the quart). *Grulee.* 230

Tonsillitis, Acute. TREATMENT. Tincture of iodine applied locally in 400 cases in children, with unusually prompt cures. Also used in pharyngitis, otitis media, tonsillar and nasal diphtheria, laryngitis, stomatitis, etc. For a milder application deep down in throat or in nose, equal parts glycerin and iodine tincture is satisfactory. In acute contagious diseases applications of iodine tincture to throat are of prophylactic value, combating spread of infection. *Sill.* 171

Trachoma. TREATMENT. Subconjunctival injections of diphtheria antitoxin used in 50 patients, 30 being practically cured and 20 greatly improved. After turning lids, eyes first washed with boric acid and saline solutions, then 1 c.c. fresh antitoxin injected in each lid from within outward. Lids then returned to normal position and another cubic centimeter injected under skin and muscle of upper lid. Inflammatory reaction for thirty-six hours, then disappearance of granules. Three or four such treatments given successively. *Pachopos.* 178

Tuberculosis. TREATMENT. Tuberculin applied locally in 10 cases, comprising suppurative cervical adenitis, anal fistula, and sinuses, with early cures in previously rebellious cases. Parts first irrigated with salt solution, then tuberculin solution sprayed on, or, in sinuses, introduced with syringe and flexible cannula. Mouth of sinus sealed with collodion for several hours. Initial dose must be small; later dose is carefully increased, avoiding general reaction. Locally there is pronounced reaction at first, then stimulation of processes of repair. *Beasley.* 56

Tuberculosis, Pulmonary. DIAGNOSIS. Hemoptysis occurring without warning in young adults, and unassociated with further signs or symptoms of tuberculosis, is probably of tuberculous origin and should be so treated. Hemoptysis in pneumonia, bronchitis, asthma, or following trauma should lead to suspicion of an underlying tuberculous process. *Bartlett.* 101

TREATMENT. Citrate of iron hypodermically found very efficient in relieving the secondary anemia in 257 cases, 70 per cent. of which were advanced or far advanced cases. Employed routinely where reduction in hemoglobin greater than 10 per cent. Dose, 0.05 Gm. (5/6 grain), injected in buttock. Italian preparations found least irritating. Maximum benefit attained after 30 to 40 consecutive daily doses. *Bullock and Peters.* 32

Comparative study of 146 cases receiving

tuberculin and 234 treated by hygienic-dietetic method alone. Conclusion reached that tuberculin is valuable in tuberculosis, especially in moderately advanced cases, and is of special value as a protection against relapse. Autogenous vaccines used in 75 other cases; temperature rapidly returned to normal, expectoration diminished, and hemorrhage was rare. *Petit.* Page 57

Creosote carbonate, 10 grains in capsules every three or four hours, used with satisfaction in cases of tuberculosis with sudden symptoms of pneumococcic infection (shown by malaise, moderate rise of temperature, followed by bloody sputum and preponderance of pneumococci in saliva). *F. N. Robinson.* 152

Treatment of cough discussed. Facilitate early morning cough with glass of hot water or milk with or without 1 dram of whiskey or brandy, 5 or 10 grains of sodium bicarbonate, or a little Saratoga Vichy. For irritative cough, avoid sources of irritation, such as rapid talking, laughing, smoke, etc.; control the desire to cough. Deep-breathing exercises, change of position in bed, sucking ice, sipping orange juice, demulcent lozenges. Where pharyngeal irritation, use slightly astringent lozenges: Ext. grameriæ, potassii chloratis, ana gr. xv (1); olei menth. pip., ♏ j-ij (0.06-0.12); ext. glycyrrhizæ puri, ʒiiss (10); ft. in trochiscos no. xxx. Steam inhalations, with ʒj-ij of cpd. tr. of benzoin or oil of pine to a pitcher of hot water. Where bronchial secretions abundant: Inhalation from perforated zinc mask (Robinson's inhaler) of 10 drops of equal parts of alcohol, creosote, and chloroform. For pharyngeal irritation, also try sprays of 1 per cent. menthol or pine oil in benzoinol or albolene, or a mixture of equal parts of menthol, camphor, and eucalyptol in 100 parts of benzoinol. For night cough: Warm drink before retiring; warming the bed; cross binder, above and below shoulders and across chest and back, previously dipped in cold water (60° F.) and covered with similar dry cross binder and a flannel jacket; renew in three hours or leave on all night. Strapping chest, where pleurisy. Sometimes counterirritation with iodine tincture or blisters over the apices or other site of irritation. For nervous cough: Bromides in 10- to 20- grain doses, chloral hydrate in 5-grain doses, or a combination of the two. Where wheezing and much secretion: Belladonna tincture, 10 to 20 minims, or atropine sulphate, gr. $\frac{1}{100}$ to $\frac{1}{50}$. Codeine, gr. $\frac{1}{12}$ at first, then $\frac{1}{8}$ or $\frac{1}{4}$ every two hours; heroine, in smaller doses; finally morphine, $\frac{1}{24}$ grain, increased if necessary. For abundant expectoration: Respiratory exercises, change in position, cross binder, and especially creosote inhalation and atropine. *Meara.* 239

Typhoid Fever. Diagnosis. Russo's test found a valuable diagnostic aid in early cases. To 4 or 5 c.c. of patient's urine add 4 drops of 0.1 per cent. aqueous solution of methylene blue. After thorough admixture examine against light; a mint- or emerald-green color is positive, whereas any bluish tint renders test negative. Urines containing bile also give the test; therefore, this must first be excluded. *Rolph and Nelson.* 58

Early recognition of perforation facilitated by observation of concentric diminution of liver dullness. (See Pneumoperitoneum.) *Berg.* 108

Careful, repeated leucocyte counts claimed to afford earliest reliable means of typhoid diagnosis for general practitioner. Characteristic leucocytic picture: 1. Leucopenia, progressive, very likely preceded by slight leucocytosis. 2. Initial moderate polynucleosis, lasting first four to eight days. 3. Progressive, marked lymphocytosis, displacing polynucleosis and lasting well into recovery. 4. Increase in large mononuclears, beginning with onset of disease. 5. Sudden, early, and complete disappearance of eosinophiles. *Hultgen.* 116

New test for typhoid fever described: With fine hypodermic needle inject a few drops of suspension of dead typhoid bacilli, made by taking 1 drop of 1000 million vaccine and mixing it thoroughly with 20 drops of sterile saline solution. Inject intradermally and as superficially as possible. Typhoid patient shows absolutely no reaction, while non-typhoid patient shows an area of well-marked redness disappearing forty-eight hours after injection. *Prendergast.* 300

Treatment. Ipecac used in 6 cases with good results. In every case but 1 patient became afebrile within four days. Dose in the earlier cases, 30 grains (2 Gm.) on first evening, diminished daily by 5 grains down to 10 grains (0.65 Gm.); in other cases, 10 grains morning and evening, later decreased to 10 grains once daily; drug was given in salol-coated pills, preceded by tincture of opium to prevent vomiting. *Frazier.* 103

Lumbar puncture twice performed in a case with intense, persistent headache, second puncture bringing relief. *Oddo and Monges.* 178

Uncinariasis. Treatment. Beta-naphthol in 3 doses of 30 grains each at intervals of two hours, followed, again in two hours, by 6 drams of magnesium sulphate, found to expel 97.52 per cent. of total number of hookworms present. Thymol, in same dose, expelled 97.87 per cent., but caused serious constitutional disturbance. A 60-grain beta-naphthol treatment expelled 86 per cent. It was given as follows: Beta-naphthol, 4 drams (16); mucilage of tragacanth, 1 ounce (32); peppermint water, to make 6 ounces (192). *Vieal.* 230

Uremia. Diagnosis. Depression of reflexes and positive Babinski phenomenon found valuable as a very early indication of oncoming uremia. Present in the stage of "preuremia." *Curschmann.* 48

Urethritis. Diagnosis. Improved method of differentiating anterior from posterior

urethritis described. Slowly inject 1 c.c. of 0.5 per cent. aqueous solution of basic fuchsin into anterior urethra and have it retained one-half to one minute, with slight massage. Allow fluid to escape and have patient urinate in 2 high glasses. If only stained shreds are present, there is no posterior urethritis; if only white, unstained shreds, infection is in posterior urethra; if both stained and unstained, process is both anterior and posterior. *Wolff.* Page 118

Vaccination Site. TREATMENT. Picric acid applied to vaccinal lesion in 22 children, to harden tissues and prevent local infection. Four per cent. solution in 95 per cent. alcohol painted over and around vaccinal site forty-eight hours after vaccination and daily thereafter. Inflammatory reaction and constitutional disturbance lessened. No interference with success of vaccination. *Schamberg and Kolmer.* 118

Valvular Disease, Cardiac. DIAGNOSIS. To determine whether a murmur is systolic or diastolic when rate is rapid or murmur unusual, make intermittent pressure on radial artery to correspond in time with the murmur; if the finger, pressing synchronously with the murmur, feels the radial pulsations, murmur is systolic; if not, diastolic. *Long.* 167

Varicose Ulcers. TREATMENT. Stimulate granulations with silver nitrate (30 grains to the ounce), cover ulcer with sterile gauze, and apply long adhesive straps to skin on either side of lesion till skin well wrinkled. Have foot elevated on pillows till it returns to normal size. Change adhesive straps upon alternate days or oftener. Massage and attention to bowels. Linen elastic stockings, put on over white stockings to absorb perspiration, after ulcer cured. *Gills.* 178

Following method found effective in healing ulcers resistant to other forms of treatment: Place patient under deep anesthesia; remove all crusts surrounding ulcer; pour on tincture of green soap and sterile water, and scrub the ulcer with an ordinary stiff brush, previously thoroughly sterilized. Continue scrubbing, washing off *débris* with clean water, until base of ulcer is smooth and edges stand out clearly, red and hard. Paint ulcer and immediate vicinity with tincture of iodine, and apply wet boric or bichloride dressing. Pain generally complained of after recovery from anesthetic, but if bandage is kept moist with warm solution it soon ceases. Granulation soon sets in at many places, and repair is rapid and satisfactory. *Beck.* 300

Vertigo. TREATMENT. In cases of vertigo in patients with chronic nephritis or cardiac disease, arteriosclerosis or intestinal toxemia, both the general disease and aural lesions must be considered in treatment. Pilocarpine internally in small doses, gradually increased, often gives relief in inflammation of labyrinth. Where there is aural suppuration vertigo is a grave symptom, which may demand immediate surgical interference. *Dench.* 301

Vincent's Angina. DIAGNOSIS. Signs distinguishing it from lacunar tonsillitis are: 1. Absence of fever. 2. Pain more localized on affected side, and is severe, lancinating. 3. General malaise and physical exhaustion very marked.

TREATMENT. First perform gentle curettage of the tonsillar crypt involved. Then apply 12 per cent. silver nitrate solution. *Wherry.* 58

Salvarsan used locally, first in solution, then in powder, in a severe and obstinate case; prompt recovery. *Achard and Flandin.* 118

Vomiting of Pregnancy. TREATMENT. 1. Magnesium carbonate, 2 drams; magnesium sulphate, 1 ounce; mint water (1:40), 1 ounce; water, to make 8 ounces; wineglassful to be taken early in the morning. Cascara given daily in small doses for two or three weeks. 2. Simple diet; evening meal to consist only of thin porridge, gruel, or arrowroot. Koumiss; champagne, ½ hour before a meal. 3. Where relief from nausea only obtained after complete evacuation, encourage latter by the sipping of warm water. 4. Absolute recumbency in severe cases. 5. Drugs: Effervescing mixtures, salicin emulsion, phenyl salicylate, compound tincture of cardomom in dram doses, antipyrin or acetanilide with sodium bromide, small chloral and potassium bromide enemata, wine of ipecac in hourly minim doses; validol found most effective drug; menthol, 1 part in 60 of water, with 30 parts of alcohol or brandy, or chloroform (3 to 6 drops on sugar or in water) sometimes useful. 6. Rectal feeding, gastric lavage, laudanum stupes on epigastrium, ether spray, blistering of cervical spine, and ice-bags exert partly psychical effect. 7. Mental therapeutics, in purely neurotic type of vomiting. 8. Massage, electricity, blisters, etc., may help. *Hall.* 119

Whooping-cough. DIAGNOSIS. Edema of the eyelids, especially the lower lids, sometimes appears before the cough and may be of assistance in the diagnosis. *Thursfield.* 97

Wounds. TREATMENT. Nuclein solution found useful to ward off infection in cases of crushed and lacerated hands, burns, varicose ulcers, minor cuts, etc. *Achard and Redfield.* 105

Sodium perborate found useful as a dressing in infected wounds and acute or chronic ulcers. *Herzfeld.* 167

Solution of aluminum acetate recommended for dressing of infected wounds. Made with aluminum sulphate and acetic acid, of each, 300 Gm.; calcium carbonate, 130 Gm.; distilled water, 1000 c.c. For use, dilute with distilled water, 1 to 7 or 10. *Stansbury.* 227

Book Reviews

PRINCIPLES AND PRACTICE OF PHYSICAL DIAGNOSIS. By John C. Da Costa, Jr., M.D., Assistant Professor of Clinical Medicine, Jefferson Medical College, Philadelphia. Second Edition, Revised. Octavo of 557 Pages, with 225 Original Illustrations. Philadelphia and London: W. B. Saunders Company, 1911. Cloth, $3.50, net.

The second edition of this work on physical diagnosis will, the reviewer feels sure, be accorded an equally good reception as greeted the book on its first appearance. It is, as before, a concise presentation of the physical diagnosis of thoracic and abdominal diseases, of convenient size, and well printed on good paper. The new matter introduced concerns especially the subjects of sphygmomanometry, nodal rhythm, pleurisy, and lobar atelectasis. New illustrations have also been added.

At the beginning of each section devoted to a particular disease the etiology and pathology are briefly reviewed, in order to permit of intelligent comprehension of the physical signs subsequently described. The importance and significance of laboratory methods of examination are alluded to wherever desirable, but the methods themselves are not described, the reader being referred to special works on this subject. What the book does include, however, it covers very thoroughly and clearly. The illustrations are numerous and well chosen, consisting of photographs of cases, diagrams, figures showing the technique of eliciting the various physical signs, pathological specimens, and radiograms. Altogether, the second edition of this work can be warmly recommended to both students and practitioners.

UPON THE INHERITANCE OF ACQUIRED CHARACTERS. A Hypothesis of Heredity, Development, and Assimilation. By Eugenio Rignano. Authorized English Translation by Basil H. Harvey, Assistant Professor of Anatomy, University of Chicago. Chicago: Open Court Publishing Company, 1911.

This work contains much food for thought, discussing, as it does, the questions of evolution and heredity, and being particularly concerned with the problem about which has centered the long controversy between the biological schools of Lamarck and Darwin. The work is of philosophic type, the author's presentation is characterized by the lucidity of expression of the Latin, and the argument throughout bears the impress of a mathematical type of mind, in the present case trained by a physical and engineering education. For these reasons the author's presentation arrests attention, disarms prepossessions, tending, therefore, to carry conviction, and is one of the most interesting of works upon heredity.

Among the most important features to be noted are: (*a*) The concept that life-force, or vital energy, and nerve-force are identical; (*b*) the theory of centroepigenesis offered to supplant the opposing theories of preformation and epigenesis; (*c*) the theory of elementary accumulators of nerve-energy, mnemonic elements or vital units (being the rôle played by the ultimate morphological unit in phylogeny, ontogeny, and physiology); (*d*) the theory that the vital phenomenon is essentially due to an intranuclear oscillating nervous discharge,—which together with hypothesis *c* affords an explanation of the fundamental life-phenomenon, which is nutrition. In addition there is an appendix in which is discussed the nature of the effective tendencies. For the general reader, perhaps the most attractive portion of the work is that devoted to a critical *résumé* of the theories of heredity of all the more important biologists, including the paleontologists. The mass of literature from which this selection is derived is so great as to make it practically impossible for anyone not a specialist in this field to familiarize himself with it; hence the great value of this critical *résumé*.

The concept that life-force and nerve-force are identical, together with that of the homology between nerve-energy and the other modifications of physical energy, enable the author to present and discuss many of the facts of biology and development, or ontogenesis, in terms and forms of thought already familiar to physicists and cultured men not physical specialists. As a presentation from this point of view is novel, it throws a new light upon, and serves to illuminate, many of the more abstruse biological problems. In a brief review it is impossible to follow the author's argument in favor of the three new hypotheses which he advances, and it must suffice to say that his critical judgment of the theories of others is temperate and that his own views are supported by a mass of evidence and by logical reasoning of a refreshing character. In the opinion of the writer, the point in which the logic of the author is perhaps most open to question is with reference to the rejection of the theory of preformation germs, or unit characters, in the germ-plasm. Rignano maintains the view that the germ-plasm is *not* homogeneous in its nature; and also one of the fundamental points in his own concept is the existence of elementary accumulators of nerve-force,

or mnemonic elements, or vital units—the primordial morphological unit. This concept, it would seem to the writer, not only is not opposed to the concept of preformation germs, pangenes, or unit-characters, but, if it shall be accepted as true, it throws great light upon the problem as to the manner in which the unit-characters in the germ-plasm bring about the results of their existence in the ontogeny of descendants.

The impression of the reviewer is that Rignano has made a valuable contribution to the philosophy of biology, and that if his hypotheses, upon adequate examination by those biologists who are best qualified to pass judgment upon them, shall not be found to be wholly true, nevertheless, they are more nearly approximate the truth than the epigenetic and preformation theories now current.

The appendix concerning the nature of the Affective Tendencies discusses a subject of fundamental importance to psychologists and psychiatrists. It is charmingly, lucidly, and logically written, and not only greatly illuminates this field of science, but also carries conviction of the essential soundness of the concept that the affective tendencies are mnemonic in nature. Thus, not only is the verdict of the observation of mankind that "habits become second nature" found to be true, but also it becomes apparent that nature, or character, is merely the resultant of the habits of the individual and of his ancestors.

Fourth Report of the Wellcome Tropical Research Laboratories at the Gordon Memorial College, Khartoum. Andrew Balfour, M.D., B.Sc., F.R.C.P. Edin., D.P.H. Camb., Director. Volume A, Medical; 404 Pages, with 118 Text Illustrations and 23 Plates. Volume B, General Science; 334 Pages, with 101 Text Illustrations and 20 Plates. New York: Toga Publishing Co., 1911. Vol. A, Cloth, $5.00, net; Vol. B, Cloth, $4.50, net.

These magnificent volumes represent the work done in the Wellcome Laboratories, Khartoum, Africa, since the Third Report in 1908. Vol. A contains valuable observations upon a large number of tropical diseases, such as sleeping sickness, Egyptian relapsing fever, kala-azar, "Oriental sore" or Leishman nodules, ulcus tropicum, fevers of various types, botryomycosis, mycetoma, dysentery, etc., together with much information on tropical sanitation, the water supply of towns in the tropics, practical hints concerning blood examinations, etc. The illustrations are numerous and excellent; many of the plates are colored. All who are interested in the subject of tropical diseases will find in this volume a mine of admirably presented information.

Vol. B, on General Science, contains reports of chemical researches, including investigations of the water supply of Khartoum and of Sudan soils, reports of studies in entomology and ornithology, notes on scorpions, snakes, etc., a most interesting and thorough presentation, with numerous illustrations, of the ethnology and tribal customs of the natives in the region surrounding Khartoum, and, finally, an extensive section devoted to "Municipal Engineering Problems in the Tropics." Like the first volume, this one is crowded with new and important facts, and constitutes a superb monument to the industry of the staff of the Wellcome Laboratories.

Second Review of Some of the Recent Advances in Tropical Medicine, Hygiene, and Tropical Veterinary Science, Being a Supplement to the Fourth Report of the Wellcome Tropical Research Laboratories at the Gordon Memorial College, Khartoum. By Andrew Balfour, M.D., B.Sc., F.R.C.P. Edin., D.P.H. Camb., Director, and Captain R. G. Archibald, M.B., R.A.M.C., Pathologist and Assistant Bacteriologist, in Collaboration with Captain W. B. Fry, M.R.C.S., L.R.C.P., R.A.M.C., Protozoölogist and Assistant Bacteriologist, and Captain W. R. O'Farrell, L.R.C.P. and S.I., R.A.M.C. 448 Pages. London: Baillière, Tindall & Cox, 1911. Cloth, $3.75, net.

This work is, as its title implies, a comprehensive record, derived from many sources, of the present state of knowledge in tropical medicine. The various subjects included are considered in alphabetical order, under each being given abstracts of all the recent important papers—1908 to June, 1911. The careful manner in which the information collected upon such subjects as malaria, beriberi, leprosy, dengue, enteric fever, trypanosomiasis, and many other diseases has been arranged and indexed will render the volume a most useful work of reference.

The General Field

Conducted by A. G. CRANDALL

Hospital Scandals

The usefulness of newspaper publicity is sometimes questioned, but it certainly performs a valuable function when the details of mismanagement of a hospital are made plain to the interested public.

There is one general extenuating circumstance, however, which can almost always be invoked as an answer to charges of this kind, viz., the increasing difficulty in securing reliable help for moderate compensation.

Theoretically, the attendant in a hospital should be a person of good average capabilities, good health and the amiability which goes with it. Practically, the supply of people furnishing these qualifications is considerably less than the demand.

The logic of the situation, therefore, is that those attendants who are competent are probably worth considerably more than they receive, and those who are incompetent are dear at any price.

There are undoubtedly instances where graft enters into the placing of contracts for supplies but this in reality traces back to the same cause.

No investigation of hospital abuses should be considered complete until the wage question has been given fair consideration.

A Blow to "Property"

The Constitution is getting a great many jolts these days, *i.e.,* from the standpoint of a literal interpretation.

The lumber interests felt that their right to cut the timber in the most picturesque and attractive sections of the White Mountains was something sacred and which could not be assailed, but they have learned by a recent decision that they must desist and accept reasonable indemnity for the loss of their timber. They must hereafter have the tantalizing vision of those splendid trees, each one containing a certain minimum amount of board feet of marketable lumber, standing there to mock them whenever they pass through that section of the state.

That a man can do as he will with his own is capable of very considerable modification, even from the Constitutional point of view.

Pass the Word Along

It is only a comparatively few years since we have had a correct understanding of the effects of the sun's rays, physiologically. The researches of Finsen made clear much that had been mysterious before as to the chemical effects of the rays of the sun—effects which were lost if the same rays passed through glass.

In consequence of this and similar discoveries, people have a very different idea about sunshine than they had formerly. It is now pretty generally understood that sunshine is about as useful to humanity as it is to plants. The family physician can indeed prescribe the direct rays of the sun as about the greatest cureall known to mortals.

The belles of earlier generations were careful to protect themselves against sunburn, but had occasion to seek professional advice for chlorosis. While efficacious washes for the complexion may be expensive, they are more in line with modern hygiene than the ferruginous tonics.

No Sense of Humor

The new reform administration of the city of Philadelphia seems to be sadly lacking in a sense of humor. Resuscitating the ordinance of 1906, which has been in a comatose condition practically ever since its passage, instructions have been sent out to the police department to promptly apprehend all motorists whose danger signals to pedestrians comprise more than one note.

Automobile drivers have considered it as highly amusing to equip their machines with fantastic signal devices calculated to send cold chills creeping up and down the back of every timorous woman who might be on the street. There are, however, some people who have no proper appreciation of the picturesque, and the present mayor of Philadelphia and his assistants seem to have exceptionally prosaic ideas about the equal rights of those who use the city streets.

There are enough nerve-racking noises in every city without adding the automobile siren nuisance.

The Artistic Temperament

Just what it is that leads the grand-opera singer to such frequent exhibitions of "temperament" has never been fully explained.

Mr. Oscar Hammerstein, grand-opera director and impresario, is reported to have once again come in contact with the artistic temperament. It was but a trifle. He was merely banged over the head with something by an enraged grand-opera star who felt that she had been ill treated.

Mr. Hammerstein has told us a great deal about the artistic temperament in various interviews and in interesting reminiscences of his career. While the onlookers might have been astonished, it is more than probable that Mr. Hammerstein was not in the least bit surprised. He possesses quite some a. t. himself. The average prosperous business man accustomed to wearing a high silk hat and frock coat throughout the business day would be somewhat disturbed to meet with such an experience, but not so the impresario, to whom it is merely an unimportant detail of the day's work.

Whether the artistic temperament is physiological or pathological is hard to say. Those afflicted in the acute sense seem to see no reason why they should make personal application of the latest revised statutes, believing that people of talent should be immune to the laws governing ordinary citizens.

The feminine artistic temperament seems to manifest itself conspicuously in seeking the right of suffrage. Indeed, the artistic temperament has recently been so much in evidence in England that it is not surprising that some prominent English physician should declare that Americans are all going crazy. Whenever some unpleasant discovery is made as to the physical or mental characteristics of Great Britain, some eminent English savant proceeds immediately to apply the diagnosis to America. This being in itself marked evidence of the a. t., it is logical to regard the British Isles as the geographical center.

False Modesty

Among other illogical elements in the ethical standards of the medical profession is the false modesty which prevents the family doctor from showing, on his own initiative, an interest in the physical well-being of his regular patients. To do that, according to the code, is to be drumming up trade, and every right-minded doctor is naturally reluctant to appear in that light.

Considering the proneness of human nature to be neglectful, it is unfortunate that such a sentiment should prevail. The family doctor should be in a position to follow up his cases which have reached the comfortable stage, but which he knows should continue to have professional supervision.

The doctor, for instance, is called to prescribe for a child ill with some of the various disorders to which childhood is subjected. He notes certain constitutional tendencies which should be corrected. He advises the parents accordingly. Thereafter, however, unless he is consulted on the subject, he must forever hold his peace, at least until that same child comes voluntarily under his professional care again.

Many really well meaning parents allow their thrifty instincts to predominate to such an extent that they feel that they are justified in keeping away from the doctor until an actual crisis. This is false economy from the patient's standpoint, detrimental to the public interest, and contrary to the interest of the medical profession. There should be some way to enlighten public sentiment on that subject, and undoubtedly the time is not far distant when a physician will be expected to exercise a reasonable degree of supervision over his patients at other periods than in time of stress.

Drinking Milk to Excess

The statement of Dr. Lyman Abbott that ex-President Roosevelt drinks milk to excess undoubtedly accounts to a considerable extent for the remarkable physical endurance which he is known to possess.

Reliable authorities in dietetics have stated that, if there was proper appreciation of the food value of pure milk, the public would exhibit less impatience when they were required to pay an advanced price for a prime article.

The value of strictly fresh milk as compared with that which has been kept for a considerable period of time is hardly understood and appreciated by many otherwise well-informed persons.

There is probably no article of food in common use in large cities that presents in its various aspects so many important problems as milk. The adult person of average health who becomes addicted to the milk habit and is able to secure a good quality of his favorite beverage is likely to linger among his friends and acquaintances to a rather advanced age.

A Timely Suggestion

The Director of Public Health of Philadelphia has published a warning to all parents that they should watch closely their children's teeth, and make sure that if the first crop of teeth shows signs of decay they are promptly attended to, thus preparing the way for a better quality of permanent teeth. He especially directs attention to the fact that decayed and neglected teeth provide a culture medium for development of disease germs which are carried into the system, and which incidentally may prove one of the potent factors in undermining the general health.

There are undoubtedly many fads and health suggestions, received with much seriousness by large numbers of well-meaning people among the laity, which are of infinitely less importance and significance for the general health than the care of the teeth.

That many otherwise sensible people allow their teeth and those of their children to become practically ruined by neglect is one of the unaccountable happenings of these days of universal knowledge.

Parcels Post

Advocates of a parcels post consider that such a system would largely solve the problem of the high price of food products in the cities. Those opposed say that it would tend to emasculate the small dealer in city and country, and that this would be a disadvantage in a business way and produce very serious hardships among the dealers.

There is no radical change in any business system which will not hurt somebody. When a railroad leaves off two or three trains per day in a suburban service, it often causes quite a good many people serious inconvenience. However, the railroads regulate the train service to suit themselves.

In the tenement-house district in a thickly populated section of a city, there may be twenty-five or thirty different milk dealers who will send their wagons to deliver bottles of milk to the various families residing in the same block. One wagon could do it at a very reasonable reduction in the cost of delivery. Such a change might naturally affect the employment market, but should logically reduce the cost to the consumers.

On the same principle, any system which will simplify the transfer of agricultural products from the producer to the consumer must be in the main for the public interest.

Naturally, country merchants in all parts of the country are making the most vigorous protest against the enactment of anything calculated to come between them and their customers, who cannot help themselves just now, but hope to later on.

The negotiations preliminary to the enactment of a new tariff law have long been held up to be about the most glaring examples of general selfishness on record, but legislation as to the parcels post seems to bring out an even greater exhibition of human nature.

A Peace Suggestion

Dr. Lorand says that he has never had a patient from the hot parts of Mexico who has not had a hypertrophied liver.

Now, this condition is likely to lead to a somewhat excitable temperament; so we can safely judge, by what is going on in Mexico a good deal of the time, that there must be a very great number of cases of enlarged liver in that suffering country.

Dr. Lorand, however, does not attribute this so much to the climate as to "faults in hygiene, especially in diet, and the use of stimulants."

A large number of people in the United States have very little knowledge of the chief articles of diet in Mexico, but it is known to embrace, to a considerable degree, peppers, beans, jerked beef, and other liver-tormenting substances.

A change of diet is very much needed in Mexico—something which will tone down the excitable temperament of the people and put them in a more placid frame of mind. Also a change in liquids.

It is probable that nothing is more calculated to soothe the agitated mentality and relieve liver strain than the use of cereal breakfast foods, which fill up considerable space, but do not overwork the digestion. Only a short period of this dietary regimen should be required to make the chronic revolutionist as gentle as a lamb.

Those who are so anxious to have that distracted country pacified, in order that they may be able to secure dividends on their mining stocks, might find it profitable to send down a few trainloads of assorted breakfast foods as an investment for peace.

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Original Articles

DIOXYDIAMINOARSENOBENZOL IN THE TREATMENT OF VARIOUS CLINICAL FORMS OF SYPHILIS, WITH A REPORT OF TWENTY NEW CASES.*

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NOTWITHSTANDING the extensive trial accorded to this remedy since its introduction into the armamentarium of the therapeutician, its precise value is still imperfectly known. That the best results are obtained from the intravenous method of administration, followed by the intramuscular with a view to pocketing the remedy, as it were, so as to prolong its action, is probably a correct dictum. It is also generally conceded that following its administration treatment by mercury is necessary to bring about the most lasting effects. It may, however, be doubted whether the question of dosage has been determined with a sufficient degree of accuracy, and the same statement holds true of the numerous contraindications.

According to Ehrlich,[1] "the observation of the Wassermann reaction represents the most valuable method we have of seeing clearly whether the syphilis is genuinely cured." It must be admitted, however, that it is too early to state definitely what is the precise and the ultimate effect of the administration of arsenobenzol on the complement fixation test. It is also to be recollected that spirochetes may be demonstrated in the lesions in the presence of a negative Wassermann reaction, after the administration of arsenobenzo[l].

Again, a clinical relapse may be associated with a negative reaction for a considerable period of time, at least. The reaction, however, disappears in the majority of cases from two to five weeks after treatment by arsenobenzol, and

* Read at the Thirteenth Annual Meeting of the American Therapeutic Society, held in Montreal, Canada, May 31 and June 1, 1912.

[1] Ehrlich, P.: "Chemotherapy," 1st ed., New York, p. 116, 1911.

this often occurs in cases in which the employment of mercury for a period of from one to several years had failed to cause its disappearance.

Billings[2] states that arsenobenzol "is undoubtedly of great value in early syphilis, and in syphilitics with gummatous infiltration and ulceration," and my experience accords with this opinion. He expresses grave doubt, however, if it will give us any better results than the rational use of mercury and the iodides. On the other hand, Meltzer[3] holds that arsenobenzol has some advantages over mercury. For example, it produces antibodies in the blood, while there is no evidence of the formation of these by mercury; its effect is much more rapid than that of mercury, and, finally, it acts favorably toward the host, causing an increase of the weight of the patient, while mercury is inimical to the host, causing cachexia.

As already stated, the most satisfactory results are obtained from the rational use of arsenobenzol followed by mercury, or what might be termed the combined arsenozenzol and mercurial method of treatment, since each of these two agents exercises beneficial effects not shown by the other. In my earlier cases, after the introduction of arsenobenzol as a remedy in syphilis, I relied upon it exclusively, while later on its use was followed by that of mercury, with more gratifying results than when the former alone was employed.

Because of the fact that there exists considerable difference of opinion as to the efficacy of arsenobenzol as compared with that of mercury, and also regarding other points referred to above, observers should continue to record their individual experiences with the use of this new remedy, the rather voluminous recent literature on the subject notwithstanding. For a similar reason, the writer has been led to report the following cases:—

Case I.—Mrs. F. E., aged 31 years, referred by Dr. P. H. Lane; admitted to the Medico-Chirurgical Hospital, November 9, 1910. Patient came complaining of mucous patches, ulcerative tonsillitis, and typical secondary lesions. Mercury had been administered for a short period without any improvement, perhaps due, in part at least, to the patient's intemperate habits,—cigarette smoking and whisky drinking. An ocular examination yielded normal findings, and the urine was found to be normal as well. November 9th, at 2 P.M., 0.5 Gm. of arsenobenzol was injected between the scapulæ. November 10th, the temperature rose to 99⅘° F. in the course of three hours, and remained at that level with slight fluctuation until the following morning, when it rapidly returned to the normal. Blood examinations were not made in this case. One-half hour after injection, the patient complained of sharp, shooting pains in the axilla and left breast, which continued for two hours, after which they subsided. On November 11th, she complained of feeling weak, though having no pain. The eruption had faded in great part, while the mucous patches had entirely disappeared. On November 21st the skin lesions, mucous patches and ulcers in the throat had all disappeared, and there was no induration at the site of injection. Two weeks after the date of injection, however, pus was liberated from the site of needle puncture and continued to flow until July 5, 1911, when signs of healing commenced to appear. In August, 1911, examination of the blood for the Wassermann reaction was negative. The patient has had no return of any of the specific lesions to date, December 15, 1911.

Case II.—Mr. C. C., aged 25, referred by Dr. John A. McKenna. Occupation, clerk; negative family and previous histories. Contracted chancre March 14, 1910, and

2 Journal of the American Medical Association, November 18, 1911.

3 *Ibid.*, June 10, 1911.

began treatment with mercury immediately. Shortly thereafter, he developed secondary lesions on the face, trunk, and extremities. The eye-ground, examined by Dr. L. Webster Fox, showed nothing abnormal, and the urine analysis gave a negative result. An examination of the blood resulted as follows: Erythrocytes, 4,460,000; hemoglobin, 80 per cent.; leucocytes, 7600. The Wassermann reaction was weakly positive (+). At the time of admission to the hospital, there were visible several dry, yellowish-white and scale-covered syphilides, varying from one to four lines in diameter, over both legs, below the knees anteriorly and posteriorly. Two small syphilides of similar character were seen on the skin between the thumb and forefinger of the left hand. The toe-nails were all devitalized, many having been shed, while the finger-nails were similarly affected, although not quite so extensively. On November 27, 1910, 0.5 Gm. of arsenobenzol was administered in neutral suspension intramuscularly under the right scapula. One hour later, pain began just below the site of injection, radiating to the right axillary and infra-axillary regions; it lasted about twelve hours, then gradually subsided. Some degree of soreness at the site of injection remained, but no mass was present, as in the previous cases. An examination of the blood two days after the injection revealed a slight leucocytosis,—11,000. No febrile reaction followed the injection. At the end of one week the patient left the hospital, showing at the time but slight improvement as regards the eruption, although this was less scaly. He returned six weeks later, at which time the eruption consisted of mere light-yellowish, scar-like spots without any scales, while the nails were being reproduced and showed a healthy, natural appearance. A Wassermann reaction at this period gave a negative result. On July 22d, Dr. McKenna reported that the lesions had entirely faded and the patient was in good health. A Wassermann reaction taken January 18, 1912, proved strongly positive (+++), though there were no visible lesions at that time.

Case III.—Miss B. J., aged 31 years, referred by Dr. H. Brooker Mills. Occupation, housework. Following primary infection, six years ago, she developed a rash on the thorax, which disappeared in the course of six weeks as the result of treatment. Two years later a different form of eruption appeared, together with alopecia and amblyopia. Two years ago an ulcer on the left leg appeared, and, later still, neuromuscular pains. The patient was intelligent and well nourished. In the lumbar region was a large, copper-colored, pigmented scar, and numerous similar spots, though smaller, varying in size from a pea to a cent, were present on the left arm. There were two in the bend of the right elbow, one on the right wrist, and several over the left thigh. The left calf showed an area, twice the size of a dollar, on which there were four little ulcers, one nearly healed. Another small ulcer with irregular contour and about one-third of an inch in diameter was seen on the inner aspect of the right leg. The left ankle showed an area of similar color, covered by scales and presenting the appearance of healed ulcers. An examination of the eye-ground proved negative; likewise a urine analysis. A blood examination showed slight symptomatic anemia, the leucocyte count being 13,200. On the other hand, a Wassermann test was found to be markedly positive (+++). On December 1, 1910, at 5 P.M., 0.5 Gm. of arsenobenzol was injected under the right scapula. The temperature rose to 100° F. by midnight, then continued at that level during the next twenty-four hours, after which it rose to 101° F. for a short period, and then declined, reaching the normal December 6th. The local symptoms, which were unusually severe, abated with the decline of the fever. A blood examination revealed the following: Erythrocytes, 4,240,000; hemoglobin, 85 per cent.; leucocytes, 14,200. On December 5th, it was observed that the pigmented spots were gradually fading, and two days later one of the ulcers had healed, while the others were much smaller. On December 12th, the patient left the hospital with ulcers practically healed and other lesions greatly improved. On January 17, 1911, the patient returned; the Wassermann test gave a positive reaction (+++). The lesions were the same as previously described, though much less marked. On January 19, 1911, 0.5 Gm. of arsenobenzol was injected after the Alt method,—10 c.c. into each buttock. Slight pains were subsequently

complained of. A very slight rise in the temperature ensued, but no induration or tenderness locally. A blood examination showed: Erythrocytes, 3,700,000; hemoglobin, 80 per cent.; leucocytes, 7200. The differential count was as follows: Polymorphonuclear neutrophiles, 58 per cent.; small lymphocytes, 28 per cent.; large lymphocytes, 12 per cent., and eosinophiles, 2 per cent. On January 21st, the leucocyte count was 12,600, but on January 23d, 24th, 25th, and 26th no abnormal increase in the leucocytes was detected. Four days after the injection, our records showed that the lesions were disappearing, and they continued to fade during the next few days, or until the patient left the hospital. The patient returned on April 4, 1911, with the lesions about the same as when she had left the hospital. The Wassermann reaction was still positive (+ + +), while on July 5th it was negative. No improvement having taken place in the lesions, 0.4 Gm. of arsenobenzol was injected intravenously into the right arm and mercurial treatment by mouth was resumed. On November 9th, patient reported that the lesions had faded since the last injection, especially those on the arms. The Wassermann reaction was negative on December 28, 1911. Two days later, 0.45 Gm. of arsenobenzol was injected intravenously; no febrile reaction occurred. Following the injection, the lesions on the arms became almost imperceptible, and those on the lower extremities also showed improvement.

Case IV.—C. W., aged 30, referred by Dr. Robert H. Bolling. Occupation, merchant. Admitted December 1, 1910. About five years ago he contracted a primary sore, followed by secondary lesions. Ever since the date of primary infection, treatment was continued. About two months ago, he developed mucous patches in the mouth and noticed enlargement of the inguinal and postcervical glands. Since then he has had recurrences of mucous patches in mouth. The Wassermann reaction was positive (+). An eye-ground examination by Dr. Carl Williams gave negative results, and the urine analysis showed the kidneys to be healthy. On December 3d, at 12.30 P.M., 0.5 Gm. of arsenobenzol (6 c.c., neutral suspension; Wechselmann method) was injected in the right buttock. There was pain for a couple of hours, after which it was practically nil, although slight soreness remained for some days. The temperature after the administration of arsenobenzol gradually rose to 100° F. by 9 P.M., and then as gradually declined, reaching the normal level by 9 A.M. on the following day. The patient left the hospital without permission on the second day following the injection. In the course of six weeks from the date of the injection, he returned to his physician, Dr. Bolling, with a mucous patch in the mouth. A second injection was advised by his physician, but he refused to have it done. He was now given the usual treatment by mercurial preparations. Six months after the injection, Dr. Bolling reported that the lesions had disappeared under the above treatment.

Case V.—Mr. C. D., aged 32, referred by Dr. Ernest M. Dorsett. Occupation, baker. Entered the Medico-Chirurgical Hospital, December 2, 1910. The primary lesion developed September 1, 1910. Within forty-two days, this lesion healed, although it broke out again three weeks ago. Twenty-one days after the initial lesion, an eruption appeared, principally over the abdomen and beneath the scapula posteriorly; it lasted five weeks, and disappeared without leaving any trace of its former presence. Mucous patches occurred during the progress of the rash and have continued to recur until now. The physical signs were negative at the time of admission, except that several mucous patches in the mouth were visible. There was also marked gingivitis due to salivation. The urine analysis and eye examination both proved negative. A blood examination made just prior to the injection (December 3d) showed the following: Erythrocytes, 5,250,000; hemoglobin, 95 per cent.; leucocytes, 7400. The Wassermann reaction was positive (+ + +). On December 3d, at 1.30 P.M., the patient was injected in the right gluteal region with 0.45 Gm. of arsenobenzol after the Wechselmann method. Immediately after the injection, he experienced sharp pain in the buttock, radiating down the leg, which persisted till 11 P.M., when it gradually disappeared. On the following morning some slight degree of soreness remained, but no pain. On

December 5th, the pain reappeared at the site of injection. The mucous patches were now gradually disappearing, and the pains persisted at intervals until December 9th. The mucous patches healed progressively, and on December 9th the process was complete. The temperature rose gradually after the injection and at 9 P.M. was 99.4° F.; it then declined and touched the normal level at 9 A.M. without subsequent rise. On December 7th, a blood examination revealed leucocytosis (13,000). On December 9th, a blood examination gave the following result: Erythrocytes, 4,620,000; hemoglobin, 90 per cent.; leucocytes, 11,000. On March 21, 1911, four months and a fortnight after the first injection, the patient returned with mucous patches in the mouth, several on the lower lip one-half inch in diameter and two smaller ones on the upper lip. The Wassermann test proved negative. At 4.30 P.M. an injection of 0.5 Gm. of arsenobenzol was given, in the left gluteal region only. March 22d, the temperature, which had been slightly elevated, was normal. A blood examination revealed the following: Erythrocytes, 4,600,000; hemoglobin, 85 per cent.; leucocytes, 12,600. On March 23d: Erythrocytes, 4,800,000; hemoglobin, 80 per cent.; leucocytes, 10,600; differential count showed polymorphonuclear neutrophiles, 58 per cent.; small lymphocytes, 30 per cent.; large lymphocytes, 10 per cent., and eosinophiles, 2 per cent. On March 26th, the mucous patches were almost gone, although still covered with a whitish "scum." The patient stated that he could not feel them. The left buttock was still slightly tender (not painful), and there was slight induration. On May 20th, he called and stated that he felt well; no lesions were discoverable. (Dr. Dorsett has not seen him since the second injection.)

CASE VI.—Mr. W. V., aged 26, referred by Dr. Franckson. Occupation, shuttle-maker. Admitted December 7, 1910. Contracted specific infection two years ago, the initial lesion appearing three weeks after intercourse. This lesion healed in the course of twelve days, and seven weeks later an eruption appeared upon the chest and arms, symmetrically. During the same period he suffered from malaise, languor, and glandular enlargement, particularly in the groins. As the result of treatment, the eruption cleared away, but for the last four weeks he has had a mucous patch on the right cheek, opposite the last molar tooth. There was also a history of previous smaller mucous patches at other points in the mouth. The patient has had mercurial gingivitis, which, however, was not present at the time of admission to the hospital. Prior to the injection of arsenobenzol, the physical signs consisted of alopecia and a large mucous patch on the right cheek, near the angle of the jaw. An eye-ground examination proved negative, and the same was true of a urine analysis. The Wassermann reaction was strongly positive. On December 9, 1910, at 1.30 P.M., an injection was given of 0.45 Gm. of arsenobenzol (Alt method), 10 c.c. being thrown into each gluteal region. Pain developed immediately and persisted until 5 P.M.; it was described as a constant ache, extending from the buttocks downward to and below the knees. On December 11th, the mucous patch was improving; there was no pain, but some soreness at the site of injection. December 12th, the mucous patch was found to be healing from the periphery; there was some induration at the site of puncture. Eight days after the administration of arsenobenzol, the mucous patch had entirely healed. The patient did not return for a second Wassermann test.

CASE VII.—Mr. C. H. B., aged 33. Occupation, merchant. Admitted December 10, 1910. Confirmed cigarette smoker. In the spring of 1902, was infected, and about one week later an eruption appeared; primary incubation, fifteen days; sore throat associated with rash. Has had punched-out sores on the inner side of the lip from time to time. Has been under continuous treatment since 1902, with occasional outbreaks of symptoms. The palms of the hands showed scaly syphilides at the time of admission, and also reddish, indurated areas, less scaly, on the soles of the feet. The urine and eye-ground, examined by Dr. L. W. Fox, proved normal. A blood examination gave the following result: Erythrocytes, 5,020,000; hemoglobin, 96 per cent.; leucocytes, 8200. The differential count was as follows: Polymorphonuclear neutrophiles, 68 per cent.;

small lymphocytes, 26 per cent.; large lymphocytes, 5 per cent.; eosinophiles, 0.8 per cent.; mast cells, 0.2 per cent. Dr. Batroff had reported two Wassermann reactions negative on October 24, 1910. On December 10, 1910, the Wassermann reaction was found, however, to be weakly positive (+ —). Arsenobenzol, 0.5 Gm., was injected at 1 P.M. in alkaline solution (Alt method); 10 c.c. in the left and 8 c.c. in the right gluteal region. Pain at the sites of injection lasted about four hours, extending down to the knees and also up the back, although it was not constant. On December 11, 1910, the patient had passed a good night, experiencing no pain. The temperature showed slight elevation, to 99.1° F., at 9 P.M., but it fell to the normal during the night. On December 13th, a blood examination revealed the following: Erythrocytes, 5,012,000; hemoglobin, 93 per cent.; leucocytes, 10,000. The differential count: Polymorphonuclear neutrophiles, 71 per cent.; small lymphocytes, 13 per cent.; large lymphocytes, 15 per cent.; eosinophiles, 1 per cent.; mast cells, none. December 14th, four days after the administration of arsenobenzol, the patient felt well; soreness was practically nil, and the scales on the hands had disappeared. On December 27th, patient was examined and scaly syphilides on the hands found nearly gone, though a small area persisted in each palm. The spots on the feet had dried completely. January 6, 1911, the hands were perfectly clear; general condition good. January 21, 1911, the Wassermann reaction was weakly positive (+). On June 30, 1911, the patient returned with scaly spots on the palmar surfaces of the fingers. On October 30, 1911, the eruption showed no improvement under mercurial treatment. The Wassermann reaction at that time was negative. On December 26, 1911, a large scaly syphilide (circinate) was present on the palmar surface of the right hand and the Wassermann reaction was still negative. An intravenous injection of arsenobenzol, 0.45 Gm., was given on December 31, 1911. Following the injection, the temperature rose to 100⅕° F. (it had previously been 99⅕° F.), but quickly returned to normal. The leucocyte count was 10,200. Seventy-two hours later, the eruption showed some improvement, and at the end of three months the patient reported its complete disappearance.

CASE VIII.—Mr. M. H. J., aged 24, referred by Dr. Edward B. Gleason. Occupation, telephone repairer. Admitted to the Medico-Chirurgical Hospital, December 8, 1910. Had contracted initial lesion six weeks prior to the date of admission. Five weeks thereafter, an eruption made its appearance; it was bilateral, symmetrical, and principally roseolar in character. It had in great part faded when he came under observation. Mucous patches appeared in the mouth concomitantly with the eruption, and also postcervical glandular enlargement, with pain in the neck. At the time of admission, physical examination showed the presence of a scar on the outer surface of the left leg, one inch by one-half inch in diameter; also a somewhat smaller scar on right side of forehead. Over the back and chest anteriorly there was a fine papular eruption with symmetrical distribution; also on the outer surface of the left arm. Nearly all accessible lymphatic glands were slightly enlarged. The gums receded and were inflamed, with considerable pyorrhœa alveolaris. The teeth were in poor condition. Both tonsils were covered with a yellowish ulceration, and another, about the size of a dime, was present on the posterior wall of the pharynx. An ulcer was seen on the uvula. The mucous patches showed a strong tendency to spread. December 14, 1910, at 9.30 A.M., a report on the urine from the laboratory was negative. The Wassermann, however, was positive (+ + +). The blood showed oligochromemia of moderate degree, and there was hypotension. At 6 P.M. 0.4 Gm. of arsenobenzol was injected by the Alt method (10 c.c. in the left and 11 c.c. in the right buttock). There was marked fibrillary twitching at the site of injection in this case, and the patient complained of cramp-like pain. On December 15th, the patient had severe local pain for two hours after the injection, since which time he has been able to repose on his back with comfort. The ulcers in the mouth were already improving; the temperature rose somewhat, to 100⅘° F., in the course of a few hours after the injection had been made, but it declined to the normal as early at 11 A.M. of the next day, then rose again to 99⅖° F. for a

twelve-hour period, after which it returned to the normal and there remained. It is interesting to note that just before the injection the leucocyte count was normal; also on the following day, but showed an increase of 11,600 on December 16th. Later it subsided, and on December 22d was again normal. Immediately after the injection, the hemoglobin was 85 per cent. and it kept at that level during the patient's stay in the hospital. On December 17th, the patches on the tonsils and pharynx were healing rapidly, and the skin eruption was fading. December 21st, the throat was quite clear, but the skin not entirely so, although improving. Slight tenderness was present at the point of injection. Three days later, the skin had practically cleared. Nothing could be learned of patient's condition after he left the hospital.

Case IX.—Mr. L. W., aged 51 years. Occupation, plumber. Admitted to the male medical ward of the Medico-Chirurgical Hospital, January 4, 1911. Specific infection in 1904; ten days later, an eruption appeared, followed by condylomata and slight alopecia. More recently, he had suffered from headaches. A physical examination at the time of admission showed numerous patches over the scalp arranged in the form of wheals, especially in the occipital region. These were covered with grayish scales, which left a bleeding surface when they were removed. A number of mucous patches in the mouth and a pigmented area in left lumbar region, probably the site of a former gumma, were also noted. An examination of the eye-grounds by Dr. L. Webster Fox a few days previous to admission showed them to be entirely normal. The urine analysis was also negative. The blood showed moderate oligocythemia, oligochromemia, and leucopenia. The Wassermann test gave a strongly positive reaction (+ + + +). January 4, 1911, at 4 P.M., 0.5 Gm. of arsenobenzol was injected by the Alt method into both gluteal regions. Fibrillary tremor followed, more marked on the left side. Practically no suffering was associated with the administration of the remedy. There was a slight rise of temperature, which attained its maximum at 8 P.M. (99.8° F.); on the following morning, it had returned to the normal, and it remained there throughout the remainder of the patient's stay in the hospital. There was some induration at the site of puncture, with slight tenderness to pressure. No leucocytosis followed the injection of arsenobenzol in this case. January 7, 1911, the scaly patches were beginning to diminish in size. January 19th, two weeks after the injection, the eruption had practically disappeared. February 3d, the patient returned; the scalp was now clean and the general condition excellent. July 18th, the patient was still free of eruption and mucous patches. August 16th, the skin was clear, though the Wassermann reaction was positive (+ +). On February 1, 1912, the reaction was weakly positive (+), and ten days later 0.5 Gm. of arsenobenzol was injected intravenously. Since then no clinical symptoms of the disease have manifested themselves.

Case X.—Mrs. P. C., aged 25 years, referred by Dr. C. N. Russell. Occupation, housewife. Admitted January 5, 1911. The patient had been married seventeen months before, and one month previously had had a miscarriage. The primary lesion was observed two months prior to her entrance in the hospital. An eruption appeared on the trunk and forearms immediately after the miscarriage, and subsequently she developed pharyngitis and glossitis. Snuffles were also present, while the posteervical and inguinal lymphatics were enlarged. The physical examination revealed a few papular elevations on the trunk and arms, as well as a few pigmented marks over the back and left forearm. The face showed a few pits. The Wassermann reaction immediately after admission to the hospital was strongly positive (+ + + +). An eye-ground examination was negative, and the blood revealed the following: Erythrocytes, 3,900,000; hemoglobin, 85 per cent.; leucocytes, 6400. A differential count gave: Polymorphonuclear neutrophiles, 68 per cent.; small lymphocytes, 23 per cent.; large lymphocytes, 8 per cent.; transitionals, 1 per cent., and eosinophiles, none. January 5, 1911, at 1 P.M., 0.45 Gm. of arsenobenzol was injected after the Alt method,—10 c.c. into each gluteal region. Considerable pain developed at once, which persisted with a tendency to increase until relieved by morphine, gr. ¼ hypodermically, in the evening.

The temperature rose to 100⅖° F. at 11 P.M., and continued at 100° F. until 9 A.M. the next morning, after which it quickly fell to the normal. January 7th, patient said that she did not sleep well, and complained of generalized soreness and sore throat. On inspection, the throat was seen to be congested, but neither deposits nor ulcers were visible. At the same time the temperature ascended from the normal to 99⅘° F., and fluctuated between that level and the normal during the next two days, when the other local and general symptoms, including soreness about the elbow and hip joints, also subsided. January 6th, a blood examination revealed a result similar to that noted above; on January 7th, the leucocytes rose to 9600; on January 9th, to 12,600, and on January 11th and 12th they were found to be 6800 and 7600, respectively. January 9th, the spots were fading, while on January 11th the eruption presented a decidedly faded appearance and the pigmented spots were disappearing. On February 15th, the patient returned to hospital for a Wassermann reaction, which proved negative. The skin lesions had entirely faded and patient felt well. In August, 1911, no lesions were present, and the Wassermann reaction was negative, but, as the patient was pregnant, an intravenous injection of arsenobenzol (0.6 Gm.) was given by Dr. Edward B. Finck. On December 16, 1911, Dr. Finck gave another intravenous injection of 0.6 Gm. for its effect on the fetus in utero. On January 17, 1912, the Wassermann reaction was negative, and there was no clinical evidences of syphilis.

CASE XI.—Mr. C. T., aged 34 years, referred by Dr. Chas. G. Steinmetz, Jr. Occupation, butcher. Admitted to the Medico-Chirurgical Hospital, January 9, 1911. Contracted specific disease October 15, 1910, the initial lesion appearing twelve days after exposure. About December 1st, he observed that his hair was beginning to fall out, and a slight rash appeared on the legs and forearms, which has since disappeared. Recently, his throat has become sore and his tongue fissured. The physical examination revealed an adult male of large stature and well nourished; the skin was clear except that a few papules were seen over the legs and hips and on the anterior aspect of the chest. The inguinal glands were slightly palpable. The tongue showed a median fissure about one inch in length. The urine analysis proved negative, and the same was true of an examination of the eye-ground, made by Dr. Fox. The blood examination prior to the use of arsenobenzol gave the following result: Erythrocytes, 3,750,000; hemoglobin, 80 per cent.; leucocytes, 8200. The differential count showed: Polymorphonuclear neutrophiles, 73 per cent.; small lymphocytes, 18 per cent.; large lymphocytes, 8 per cent., and eosinophiles, 1 per cent. The Wassermann test proved positive (++). January 9, 1911, at 1 P.M., 0.45 Gm. of arsenobenzol was injected according to the Alt method,—10 c.c. into each buttock. Considerable pain followed during the afternoon and night, so that the patient did not sleep. January 10th, the patient complained of some soreness, and there was marked induration at the site of injection. Moderate leucocytosis (11,200) was now present. A slight rise of temperature during the afternoon and night (99⅖° F.) had occurred, but the temperature was practically normal on the 10th. January 12th, the sore throat was improved; the pain at the site of injection gradually diminished, with slight induration. January 14th, the throat and tongue were practically healed, and the buttocks were slightly sore. A blood examination showed a leucocyte count of 8800, while on January 15th it was 12,200. One month later, an examination of the blood-serum for the Wassermann reaction gave a weakly positive result (+). Dr. Steinmetz reported that, as no further improvement had occurred after the patient left the hospital, a second injection of arsenobenzol (0.4 Gm.) had been given intravenously. Three weeks later the Wassermann reaction was negative, though no change had occurred in the tongue.

CASE XII.—Mrs. J. M., aged 29 years, referred by Dr. Carl Weiland, Jr. Occupation, housekeeping; American. Admitted to the Medico-Chirurgical Hospital, January 9, 1911. The patient had one child, 2½ years of age and in good health. The patient was infected October 12, 1910, but had no recollection of any primary lesion. Two or three weeks after exposure, there developed copper-colored spots on the arm and, in

fact, quite generally; this was accompanied with fever and pharyngitis in the course of a day or two. General examination revealed a young, white female of small stature and poorly nourished. The postcervical, submaxillary, and inguinal glands were palpable. The skin was pale, moist, and showed a macular eruption on the forearms and the legs below the knees, with a tendency to desquamate. The edges of the tongue were inflamed; the center coated. The throat showed an ulcerated patch on the left tonsil, but was otherwise negative. The Wassermann reaction was found to be positive (+ + +). Examinations of the eye-ground and of the urine gave negative results. A blood examination revealed the following: Erythrocytes, 3,900,000; hemoglobin, 90 per cent.; leucocytes, 9400. January 10th, at 11.30 A.M., 0.45 Gm. of arsenobenzol was injected after the Alt method (10 c.c. in each gluteal region). Pain followed; it was dull in character, and continued up to 6 P.M., when it was relieved by a hot-water bottle. January 11th, the temperature touched 101¾° F., but fever had already been present prior to the administration of the remedy. The evening temperature remained elevated for three days after the injection. A blood examination revealed the following: Erythrocytes, 3,900,000; hemoglobin, 85 per cent.; leucocytes, 11,000. The systolic blood-pressure was 120. January 12th, there was slight pain at the site of injection; the rash had already faded and the throat was improved. There was some generalized soreness, a bad cough, and dull, aching pains in knees. January 14th, the temperature was normal; the throat showed continued improvement; the eruption was dry and faded; the patient still had aching pain in the knees and hip; the cough was better. A blood examination made January 12th showed: Leucocytes, 8400; January 16th, 7800, and January 17th, 8200. January 18th, the rash on the legs and arms had almost disappeared. The throat was in good condition; pain in knees was very slight. The patient showed evidences of mild arsenic poisoning (dermatitis and slight diarrhea), which, however, soon cleared up. The specific lesions disappeared rapidly and have not recurred. Since leaving the hospital, the patient has had two intravenous injections at another institution. She is free from symptoms. The Wassermann test has not been repeated.

CASE XIII.—Mr. G. U., aged 21 years, referred by Dr. J. Hamilton Small. Occupation, draughtsman. Admitted to the Medico-Chirurgical Hospital, January 9, 1911. Primary specific lesion contracted November 15, 1910, and still present. A papular eruption on the arms and legs appeared one week before admission, together with sore throat and swollen glands on the right side of the neck. A positive Wassermann reaction was obtained (+ + +); the eye-ground proved negative (Dr. Fox), and the same was true of the urine analysis. A blood examination gave the following result: Erythrocytes, 4,200,000; hemoglobin, 90 per cent.; leucocytes, 7800. A differential count gave: Polymorphonuclear neutrophiles, 62 per cent.; small lymphocytes, 26 per cent.; large lymphocytes, 10 per cent., and eosinophiles, 2 per cent. January 10, 1911, at 12 o'clock noon, 0.45 Gm. of arsenobenzol was injected after the Alt method,—10 c.c. into each gluteal region. The patient experienced dull, aching pain at the site of injection during the afternoon and evening, with fibrillary tremors. The temperature rose to 100.5° F.; pulse, 98. January 11th, the patient complained of generalized soreness and dull, aching pain at the site of injection; slight leucocytosis (10,800). January 12th, the papules were fading; soreness at the site of puncture was only slight. The large lymphatics in the neck were gradually decreasing in size. January 14th, the rash was fading more and more, and the patient felt well; slight local soreness was still present. On March 4th, the patient returned with secondary papular syphilides over the body. A Wassermann reaction gave positive results (+ + +). The patient, however, failed to present himself for further injections and could not be located.

CASE XIV.—Mr. P. L., aged 43 years, referred by Dr. Samuel Lowenburg. Occupation, provision business. Specific infection occurred about September 15, 1910. Two weeks later, a chancre appeared on the genitals, and on November 3, 1910, a mucous patch was seen on the upper lip. On February 2, 1911, the Wassermann reaction being weakly positive (+), 0.6 Gm. of arsenobenzol (alkaline solution) was injected intra-

gluteally at the patient's home. There was some febrile reaction, ranging from 99 to 101° F., which subsided after a few days. The mucous patches healed rapidly, and the patient was free from lesions until June 27th, when several mucous patches reappeared in the mouth. The Wassermann reaction at this time was positive (+ + +), while the eye-ground was negative. On July 8, 1911, the patient was admitted to the Medico-Chirurgical Hospital, and 0.4 Gm. of arsenobenzol was injected intravenously. This was followed by no discomfort, febrile reaction, or leucocytosis, and the lesions quickly healed. Following this injection, mercurial treatment was instituted, but three months later several mucous patches returned. A third injection of arsenobenzol (0.5 Gm. intravenously) was given on October 25, 1911, after which rapid disappearance of the lesions took place. During, and for several hours after, the patient complained of pain in the gums and teeth, together with numbness in the tongue and lips. On April 3, 1912, Dr. Lowenburg reported that there had been complete absence of symptoms since the last injection.

Case XV.—Mr. H. K., called July 2, 1906, presenting slight secondary manifestations. Specific infection had occurred two months previously. Treatment by means of mercury was administered continuously for a year or more, and then intermittently until the present. All secondary symptoms disappeared in the course of two months, and then followed a long period of freedom from symptoms. More recently, from time to time, a tertiary skin eruption (rupia) appeared, amenable to treatment by mercury, as a rule. On January 17, 1911, a Wassermann test was weakly positive (+). On February 7, 1911, the eye-ground and urine analysis having both given negative results, arsenobenzol (0.4 Gm. in alkaline solution) was injected in the gluteal regions. No febrile reaction occurred and no leucocytosis was found either on February 8th or 10th. The skin cleared in the course of two weeks, and the eruption has not, thus far, recurred. On May 4th, the Wassermann reaction was doubtfully negative (±), and on August 9th a distinctly negative reaction was obtained. On April 22, 1912, patient reported that no skin lesions had recurred, and that he felt perfectly well.

Case XVI.—Mr. J. B., aged 20 years. Occupation, bartender. Admitted February 20, 1911. The patient was addicted to the excessive use of alcoholic liquors. Specific infection occurred November 11, 1910. Eruption and sore throat followed on January 3, 1911, since which time mucous patches have appeared. The mouth and throat have been worse for the past three weeks. General examination revealed a well-nourished, rational male; the skin showed a few papules and pustules on the face. The hair was falling; a large mucous patch was noted on the lip and another on the mucosa of the cheek; the throat was inflamed, but not ulcerated, and otherwise negative. An eye examination and a urine analysis showed nothing abnormal. Neither were there any other contraindications. February 20, 1911, at 1 P.M., 0.6 Gm. of arsenobenzol was injected, the alkaline method being used and 10 c.c. administered in each buttock. February 21, 1911, patient had passed a good night, and complained of no pain in the buttocks. A slight rise of temperature (100⅕° F.) occurred during the night, but at 10 A.M. this day the temperature had returned to the normal. February 22d, the blood showed slight leucocytosis (10,000); the secondary lesions showed no change. February 23d, the mucous patches showed a tendency to heal; the rash had faded; the leucocytes were diminished. February 26th, the small mucous patch had healed, while that on the lip was healing rapidly; the skin lesions were scarcely perceptible; the general condition was good. The patient left the hospital. Since that time there has been no recurrence of symptoms; the patient has been taking mercury.

Case XVII.—Capt. K. W., aged 41 years, referred by Drs. George Friebis and C. F. Chandler. Occupation, soldier, U. S. A. The initial lesion occurred twenty years ago, and was followed by well-marked secondary manifestations, at which time he was given a very brief course of constitutional treatment. Early in 1911, the patient consulted Dr. Friebis because of failing vision, and an examination of the eye-ground revealed a low-grade neuroretinitis of luetic origin. On March 20, 1911, the Wasser-

mann reaction was strongly positive (+++), and, on March 28th, 0.45 Gm. of arsenobenzol (alkaline solution) was injected intramuscularly at the patient's home. Following the injection, the patient was given mercurial treatment by mouth. Two months later, there was some improvement in the vision, and the Wassermann reaction was feebly positive (+). Five months later, or on October 29th, the patient returned, and an examination of the eyes showed them to be absolutely normal; no other symptoms of the disease were present. The Wassermann reaction at this time was negative.

Case XVIII.—Mr. K. F. H., aged 23 years. Medical student. Infected April 10, 1911; three weeks later, two chancres appeared on prepuce, and the patient was admitted to the hospital on May 23, 1911. At that time the chancres were still present, with some enlargement of the inguinal glands. The Wassermann reaction was strongly positive (++++); Dr. O. F. Mershon found the eye-ground normal. An injection of 0.4 Gm. of arsenobenzol (alkaline solution) was given in the gluteal regions. This was followed by severe cramp-like pain, which was permanently relieved by an injection of morphine. There was no febrile reaction, but on the following day there was a leucocytosis of 14,800, with 52 per cent. of lymphocytes. The patient left the hospital, going to his home in Oil City on May 25th, with slight improvement in the lesions; healing, however, was completed ten days after the injection. On July 23d, secondary lesions appeared in the throat, but these healed after seven days of mercurial treatment. October 14, 1911, the patient reported that he had been salivated; secondary lesions consisting of a few papules on the back and a small mucous patch on the right buccal mucous membrane appeared later; the mercurial treatment was being continued in small doses.

Case XIX.—Mr. G. W. B., aged 48, referred by Dr. I. C. Gable. Occupation, merchant. Specific infection occurred in 1897, for which he was treated one year ago, with disappearance of the secondary manifestations. In 1904 his memory became impaired and some mental confusion, together with defective vision, developed. In 1905 the patient had a partial right hemiplegia, which gradually cleared up. An examination of the eyes by Dr. de Schweinitz at this time revealed a marked hemianopsia, which temporarily improved under heroic doses of mercury and iodide. The patient first came under my observation on December 6, 1911, at which time he complained of defective vision, poor memory, and depression of spirits. The Wassermann reaction was strongly positive (+++). The systolic blood-pressure was 132 mm. Hg. The physical examination gave negative results, except for exaggerated tendon-reflexes. An examination of the eyes by Dr. L. Webster Fox revealed hemianopsia, but no retinal changes. On January 9, 1912, 0.3 Gm. of arsenobenzol was injected intravenously. The patient returned on March 6th, much improved as regards vision and mental condition. He had gained 5 pounds in weight. A second dose of 0.4 Gm. of salvarsan was now given. Neither injection was followed by either febrile reaction or leucocytosis. On April 5, 1912, Dr. Gable reported that the second injection had not been followed by any perceptible improvement.

Case XX.—Mr. F. V. C., aged 37. Occupation, salesman. Specific infection was contracted in April, 1904, and later the secondary manifestations appeared. These yielded in great measure to treatment, but the late secondaries showed a tendency to recur, up to about one year ago. At that time, the Wassermann reaction was found to be weakly positive (+). The patient felt well and was not inclined to subject himself to treatment by arsenobenzol. January 9, 1912, a second Wassermann test was made, which gave a similar result, and one month later the patient received 0.5 Gm. of arsenobenzol intravenously. This was followed by slight leucocytosis (12,200) and a mild febrile reaction lasting three days. The fever may have been caused by the presence of a considerable local reaction, which has since disappeared, with induration of the arm for some distance above the wound. The effect upon the general condition of the patient was most favorable, although no opportunity for making a Wassermann test has since then presented itself.

Remarks.—There are a few facts shown by the above series of cases that are worthy of brief mention. In the first place, the sentiment of most writers on the subject and my own limited experience indicate the far-reaching favorable effect of the remedy in syphilis. As regards the more rapid action of arsenobenzol than of mercury, this is also confirmed by the majority of the foregoing reports, especially Cases I, II, III, V, VI, VII, IX, XI, XIV, XV, XVI, XVII, and XIX.

When I adopted the combined use of arsenobenzol and mercury in the manner described above, the tendency to relapses seemingly became less evident, although the number of injections given has been too few to base trustworthy deductions thereon; this likewise accords with the experience of other observers. Whether, however, it will be found true of all cases of syphilis, and whether certain unknown factors enter into the question, can only be decided after more extended clinical observations.

I have found the Wassermann reaction absent at times in latent cases with slight secondary and tertiary lesions, *e.g.,* in Cases III, V, and VII. In such circumstances, we may assume safely that too few spirochetæ are present to produce a reaction, but that if we administer arsenobenzol, sufficient organisms may be destroyed to liberate the stimulus needed to produce enough antibodies to give a + or + — reaction. This occurred in Case VII after injection of 0.45 Gm. of arsenobenzol. Such positive reactions, however, are of short duration, as a rule. On the other hand, a positive reaction may be present in the absence of recognizable clinical symptoms, as in Cases II, VII, IX, and XX; this is to be regarded as a sign of active internal syphilis.

A principal reason for failure to cure syphilis by the use of arsenobenzol is, in many cases at least, the insufficient number of doses administered by clinicians, the patients often receiving but a single injection. It is important to repeat the dose if we would completely sterilize the body of the syphilitic patient. Certain it is that the best way to prevent relapses is by repeated injections of arsenobenzol. Fortunately, this remedy does not produce strains of spirilla resistant to itself, as was formerly supposed.

The injections should be made, when practicable, at intervals of about eight weeks, for three or four doses in succession, unless a relapse occurs earlier, in which event an injection should be administered without delay. An exception to this rule should be made in those instances in which a negative Wassermann is found repeatedly following the first or second injection of arsenobenzol, and all recognizable symptoms of the disease have disappeared.

Wechselmann's[4] method of distilling and sterilizing the water for the saline used in the solution of the arsenobenzol immediately before the treatment has recently been adopted by me (I employed it in the last seven injections), with the same results as were previously obtained from the use of solutions similarly prepared once weekly.

4 Wechselmann: Deut. med. Woch., xxxvii, 778, 1911.

THE VALUE OF ENTEROSTOMY IN ILEUS.*

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In the following paper I have endeavored to show the value of enterostomy under certain conditions in ileus. The conclusions are based on a series of 20 cases which have occurred in my practice during the past two years.

Despite the great improvement in the treatment of abdominal conditions in which bowel paralysis occurs, either as a result of inflammatory processes, reflex inhibition, or mechanical obstruction, there is a definite percentage of these cases which fail to improve and progress to a fatal termination. My attention was first called to the possibilities of enterostomy as a life-saver by the favorable influence exercised by the early formation of a fecal fistula in peritonitis of appendiceal origin. Up to a comparatively few years ago, before the introduction of continued proctoclysis and the postural treatment, the mortality in peritonitis following appendicitis was excessively high. The small percentage of cases that did recover developed fistulæ and bowel drainage early in the disease process.

It is undoubtedly true, to my mind, that the toxemia in these cases arises more from products contained in the lumen of the bowel than from inflammatory substances produced in the peritoneal cavity. It seems most probable that the intestinal contents in obstructive cases, whether mechanical, inflammatory, or reflex, rapidly rises in toxicity, and that the virulence of the contained organisms is also much increased. Along with this increased auto-intoxication, and of hardly less grave import to the patient, is the rapid development of tympanites. There is no one of us who has not been impressed with the mechanical interference to respiration and the ill effects of pressure on the heart due to gaseous distention of the bowel. We can minimize the toxemia by raising blood-pressure by the continued injection of salt solution, by posture, and by stimulation of excretion through the kidneys. But these therapeutic measures have little influence on the mechanical condition of tympanites and retained intestinal fluid contents. It is the cases in which distention of the bowel and stagnation of its contents are prominent that furnish us with our mortality list in peritonitis, and it is in these cases that I believe enterostomy offers a good chance of relief.

Our object in opening the bowel is to permit the escape of gas and fluid contents, and upon the ability of the gut to empty itself will depend the success or failure of the operation. The factors producing the onward flow of the fecal current are peristalsis, the contractions of the diaphragm, and those of the parietal abdominal muscles. In ileus, or at least in those cases of ileus where the condition is grave enough to warrant enterostomy, peristalsis has either ceased or has become so feeble as to be negligible. We are then forced

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to rely on the contractions of the diaphragmatic and abdominal muscles to empty the overdistended and overloaded bowel. Where either of these two remaining forces is much weakened we cannot expect to get much of a result. In all the cases in which there was failure to obtain copious drainage after enterostomy, I have noticed that the abdominal muscles were either flabby, as those of fat or of old people, or had been so stretched by overdistention as to be paralyzed. In such cases the emptying of the bowel depends on diaphragmatic massage of the distended intestine, and this usually proves insufficient.

From the above it can be appreciated readily that to allow tympanites to go on to a high grade is to invite disaster, and that to expect good results in the case of old people, fat people, and those with weak abdominal muscles is to invite disappointment. The ideal time for enterostomy is not when peristalsis has ceased, but when it is apparent that it is going to cease in spite of the ordinary therapeutic measures. There are but two reliable ways to determine this, viz., by the frequent use of the stethoscope and careful observation of the character of the vomitus.

In employing the stethoscope one must not mistake for true peristalsis the gurgle of fluid in the stomach due to and synchronous with respiratory movements, or the sounds heard over the sigmoid due to fluid introduced in proctoclysis. The offending portion of the intestinal tract is the small bowel, and it is over this that we should specially listen.

Of hardly less importance as an index to approaching bowel paralysis is the character of the vomitus. The pyloric sphincter gives way as a part of the general process of bowel distention, and permits regurgitation into the stomach of the intestinal contents. When the vomitus loses the ordinary sour gastric odor and takes on that of the small bowel, and when first it is bile-stained and then becomes brown and contains black specks of altered blood, we have proof almost positive that the motor function of the bowel is abolished.

When it has been decided that an enterostomy is indicated, it becomes necessary to determine whether or not anesthesia should be employed. As in most of these cases the abdomen has recently been opened for some primary condition, it will be necessary only to cut and remove one or more of the sutures closing the original wound to reopen it. If the patients are nearly moribund, sensation is so much obtunded that no anesthetic is needed. When this is not the case, I have had the patients given a light primary ether anesthesia. In reflex ileus where there has been no previous incision I have used a local anesthetic consisting of 1 per cent. alypin and ¼ per cent. quinine and urea hydrochloride solution. A patient requiring enterostomy for ileus is in no condition to be moved. The operation should be performed in the patient's room, and, furthermore, the operative procedure should be of the simplest and quickest. It is my firm conviction that a slow, deliberate operation with the usual operating-room paraphernalia, technique, and courtesies will kill every patient.

The technique I have employed has been as follows: After the peritoneal cavity has been opened the index finger and thumb of the left hand are inserted and a loop of distended ileum as near to the ileocecal junction as

possible is picked up; a ringed sponge forceps is passed in and the loop grasped and drawn up to the abdominal opening. No time should be lost in trying to make sure that the loop is the lower ileum;—the best we can do is to be sure it is distended ileum and comes from the right lower quadrant. Two Pagenstecher linen sutures are passed through all the coats of the intestine transversely to its long axis and opposite the mesenteric attachment. They should be about half an inch apart. Between them a pair of sharp-pointed scissors is plunged into the lumen of the gut and the blades separated, thus making an opening with the minimum of cutting of the muscle fibers. A rubber tube of not less than $\frac{5}{16}$ inch inside diameter, with the end fenestrated and bevelled, is inserted for two inches and sewn in by the two linen sutures previously passed. The loop of gut is dropped back into the cavity and then drawn up to the parietal peritoneum by the tube. While it is in this position a silkworm gut through-and-through suture is passed through the wound margins, skin, fat, fascia, and tube, to hold it in this situation. It is not necessary to stitch the gut to the peritoneum; this wastes time and does no good. The danger of escaping intestinal fluids infecting the peritoneum is more imaginary than real. The little infection that does take place is local and the resulting adhesions walling off the general cavity are conservative.

It is extremely important to get the enterostomy opening low down in the ileum, for two reasons: 1. The farther away it is from the pylorus, the larger the area of distended gut that will be drained. 2. The farther away from the pylorus, the less acid will be the character of the discharge which later will be thrown out over the skin, and the less the interference with nutrition when food can be resumed and the wound left to heal. The fistula should never be made into the large bowel, as this would materially interfere with the proctoclysis, which should always be employed.

In appropriate cases, in which the abdominal muscles are not stretched beyond their limit of tonicity and in which the intestines still possess some power, the relief is immediate. The quantities of gas and fluids that are discharged are enormous. Usually these patients are so nearly dead that changing the bedding and dressings should not be permitted for several hours. As a rule, patients when much distended cannot retain salt solution even when it is given very slowly by rectum. It will be noted, however, that they improve in this respect soon after drainage of the bowel is established. One of the most striking results is the cessation of vomiting; this takes place almost at once and the symptom does not recur as a rule. If it does, gastric lavage, to clean out bowel content which regurgitated before the enterostomy was done, will usually suffice to check it. The character of the pulse both as to volume and rate soon improves. There is in a few hours a change in the patient from the appearance of imminent death to one of comparative safety.

The stay silk-worm-gut suture is left *in situ* for four or five days. When it is removed, a large safety pin is passed through the tube in such a way that it rests on either margin of the wound. In two or three days more the Pagenstecher sutures cut out of the bowel and the tube comes away. The resulting fistula heals rapidly if the edges of the wound are pulled together and kept so

by adhesive plaster. It is important to protect the skin with some thick ointment and to see that the fistulous discharges do not work their way under the plaster, as they are intensely irritating. I have found it necessary to resort to operative intervention to close fistulæ in but two instances.

It is of course impossible to say a given patient would not have recovered if a certain therapeutic measure had not been used. But so far as my individual judgment goes, I have no hesitancy in saying that I believe every one of the 20 of my series would have died promptly unless enterostomy had been performed. At least half appeared almost moribund, and in all every effort had been employed without avail to obtain bowel movement by the use of cathartics, purgative enemata, and eserine used hypodermically.

Of the series, 16 were cases of peritonitis due to various causes, 2 were incident to toxemia from disease outside of the abdominal cavity, 1 followed on the third day after a high forceps delivery with subsequent post-partum hemorrhage, and 1 was reflex.

Among the peritonitis cases appendicitis caused 10, intestinal obstruction 2, cesarian section after infection of the uterus by forceps 2, and pyosalpingitis 2. Of the 2 toxemic cases, 1 was due to lobar pneumonia in a woman eight and a half months pregnant, and the other to a general gas-bacillus infection in a woman operated on for a large, partially strangulated, pedunculated fibroid of the uterus. The case of reflex ileus developed on the twelfth day after a clean posterior gastroenterostomy for ulcer at, and partially obstructing, the pylorus. In this case there was also enormous dilatation of the stomach.

In the series there were 15 recoveries and 5 deaths; 2 of these latter can be fairly excluded from the mortality percentage; 1 was the case of gas infection with the *Bacillus aërogenes capsulatus*, which was of course hopeless from the start. The other was the case of pneumonia which died of acute cardiac dilatation after the condition of ileus had been relieved by enterostomy and the patient had been passing gas and feces by the anus. Of the remaining 3, 1 was a case of resection of a gangrenous sigmoid from volvulus in a woman. Here after ileus developed the enterostomy was done in the colon, and as a result the salt solution given per rectum promptly escaped and was not absorbed. I am convinced that her death was largely due to this fact. In the remaining 2, while some relief was secured by enterostomy, the patients eventually died from toxemia. If we exclude the cases of gas infection and pneumonia, the series shows a mortality of 16.6 per cent. If enterostomy had not been done, I am sure it would have been 100 per cent.

I report 1 case of the series as typical of what can be accomplished by enterostomy in the terminal stages of ileus:—

Mrs. E. P., widow, 21 years of age. History negative save for three previous attacks of stomach trouble. Admitted to Sibley Hospital August 26, 1911, suffering from an attack of acute appendicitis. Was put on routine treatment, and in a few days the symptoms cleared up. The patient was operated on September 2, 1911, a clean appendectomy being done. She made a rather uneventful recovery, the stitches being removed on the eighth day, when the wound was found in good condition. Her temperature was 98.6° and her pulse 80. The next day she began vomiting for the first time since the day of operation. The vomitus consisted at first of undigested food and later of a

amount of fluid was so large that I collected it and had it measured. The hospital sidered to be an attack of acute gastritis and treated as such without any relief. At this time, September 13th, at 6 A.M., her temperature was 97.6°, pulse 112, and respiration 26. There was continued vomiting of bile and beginning distention. She was put on eserine salicylate, gr. $\frac{1}{30}$, and sparteine sulphate, gr. iss, hypodermically every four hours; salt solution continuously, and given calomel, gr. ss, by mouth every one-half hour for 6 doses. Turpentine stupes were applied over the abdomen and during the day purgative enemata used four times without result. At 10 A.M. her temperature had dropped to 95°, her pulse had risen to 120, her abdomen was much distended and rigid, and there was scarcely any audible peristalsis. At noon hypodermoclysis was instituted. Temperature 97.6°; pulse 140, very feeble and irregular; distention worse, vomitus becoming brownish in color; patient cyanosed. At 2 P.M. gastric lavage was done and 6 ounces of castor oil left in the stomach. Her condition continued to grow worse steadily. At 7 P.M. audible peristalsis had entirely ceased, the distention was enormous, and there was almost continuous vomiting of dark-brown intestinal content. Her pulse was 168 and nearly imperceptible at the wrist. Without anesthesia the original incision, made eleven days previously, was opened and a loop of ileum drawn up and incised. During the operation the patient became pulseless, respiration ceased, and her pupils dilated widely. It was necessary to resort to artificial respiration for some time before she revived. Within ten minutes after the opening of the bowel nearly three quarts of a light-yellow, very offensive fluid escaped, in addition to large quantities of gas. The amount of fluid was so large that I collected it and had it measured. The hospital records show that the dressings were saturated with discharge on an average once an hour for the next twenty-four hours. Her convalescence was a stormy one for the first six days, but improvement was steady. Her nausea ceased for twenty-four hours and then recurred, when it was controlled by gastric lavage. She was given salt solution continuously by rectum for six days and was put on brandy and whey by mouth immediately. The stimulation consisted of alternate hypodermics of digitalin, gr. $\frac{1}{10}$, and sparteine sulphate, gr. iss, so that she got one or the other every three hours. On the fourth day after operation the tube was removed. The fifth day she expelled gas from the rectum, and on the eighth day had her first stool. Fecal matter ceased to exude from the fistula on the thirteenth day; bile escaped until the eighteenth day. The opening closed without operation. Her progress after the sixth day, with the exception of an attack of acute gastritis from imprudent eating on the nineteenth day, was uneventful. During this attack her pulse in twelve hours ran up from 90 to 140 and became very irregular. The patient left the hospital October 17th, thirty-seven days after the enterostomy, in good condition.

I have examined her within the last ten days, eight months after the operation, and find no hernia. She complains of no pain and has no tendency to constipation.

The conclusions I feel justified in presenting are:—

1. Enterostomy offers an excellent chance to a class of ileus cases formerly always fatal.

2. It should be performed before intestinal paralysis is complete and before the abdominal muscles are stretched beyond their limit of tonicity.

3. The lower ileum should be the region of election for the operation, and a tube of not less than $\frac{5}{16}$-in. inside diameter used for drainage.

4. The opening should not be made in the colon.

5. Old people, fat people, and people whose abdominal muscles are weakened from any cause offer an unfavorable prognosis.

VISCERAL ORTHOPEDICS.*

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As the whole field of visceral orthopedics cannot be discussed in a single paper, the following points only will be considered:—

1. *The scope of visceral orthopedics.*
2. *Correct posture defined.*
3. *Clothing in relation to visceral orthopedics.*
4. *Constipation as a symptom of orthopedic disease.*

The practice of orthopedics involves the correction of deformities by exercise, diet, hygiene, apparatus, and operative surgery. Treatment should be primarily directed not merely to the correction of deformity, but to the cure of the accompanying functional derangement. In regard to the viscera the question of function is so important that mechanical relations have not received proper attention. Displacements of the thoracic and abdominal organs do, however, cause serious functional disturbance. On the other hand, displacement may and does originate through functional disease.

While orthopedics has accomplished remarkable results in the correction of bony deformities, it has not yet come to its own in the management of visceral displacements. Definite and well-directed efforts to correct such splanchnic maladjustments as movable kidney; deformed chests, compressing the heart and lungs, and the various ptoses of the stomach, colon, and small intestine have been lacking. Some physicians content themselves in the treatment of splanchnic displacements with adjusting an abdominal belt or operating on the organs most displaced and suturing them in place. Surgeons, however, have generally concluded that to operate in floating kidney does little good because the anchored organ usually departs from the place in which it was sutured unless the patient regains health, strength, and tissue tone.

Merely to fatten a person will afford some relief in floating kidney, but will not bring about a cure. Since floating kidney and other splanchnoptoses occur in those subjects whose tissues lack strength and tone, the obvious way to cure visceral ptosis is to re-establish a healthy state of the tissues, especially of those which constitute the supports of the viscera. In fact, the rest and training in hygienic life and exercise which should follow an operation are responsible for most of the benefits experienced.

All deformities of the bones are complicated with or caused by incorrect balance and weakness of the muscles. Lateral curvature, for instance, is due chiefly to unequal and insufficient muscular development. With the pathological condition of the muscles and connective tissues is always found a diseased state of the internal organs and the sympathetic system. In like manner, incorrect postures, relaxed muscular and connective tissues, and inherited vitiated constitution stand in causative relation to most of the disarrangements

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of function and position in the treatment of which visceral orthopedics should be applied. Indeed, the subjects of visceral displacement invariably have poorly developed and ill-nourished bodies, underexercised muscles, and oxygen-starved tissues, poisoned with unexcreted waste products or other toxins.

The structures whose relaxation brings about visceral displacements are the supports of those organs supplied by the pneumogastric nerve and the visceral branches of the spinal nerves. The supporting tissues are the bones, fasciæ, cartilages, voluntary and involuntary muscles, blood- and lymph- vessels of the thorax and abdomen, and the mesentery. If these supports are uninjured and the tissues of the whole body maintained in tone and equilibrium, the viscera will remain in their proper position, but, if the equilibrium is disturbed, displacements will ensue.

In all cases of chronic indigestion, "nervousness," constipation, tuberculosis, and, indeed, in almost every chronic disease, definite visceral displacements and bad habits of posture are sure to be present. Incorrect postures consist of stooping shoulders, contracted chests, protruding and flabby abdomens, and wabbly knees, all significant of relaxed tissues. Some reason for the prevalence of visceral displacements is to be found in certain of our civilized customs which we all know are unhygienic, but which we follow through inertia, laziness, or a desire for conformity, *e.g.,* overheated rooms, neglect of outdoor exercise, slovenly habits of sitting and standing, overeating, insufficient mastication, and excesses in alcohol and tobacco. Sycophancy to fashion in dress is definitely inimical to health. The particular articles of clothing to which I take exception are high-heeled and narrow-toed shoes, neckwear which is high and stiff, and certain patterns of corsets. To condemn all corsets would be too sweeping, and it is sometimes necessary to employ abdominal supports and surgical corsets in the beginning of the treatment of visceral ptoses,—just as it may be necessary to support a fallen arch in flat-foot till the tissues shall have regained strength. A properly fitting corset should support the lower abdomen and give freedom to the upper abdomen and thorax.

The correct position is that of perfect balance, and, consequently, that of least strain on the muscles and connective tissues in general and on the visceral supports in particular. The head should be well up, the knees pressed back, the chest lifted, and the weight of the body borne chiefly on the balls of the feet. In this attitude the muscles of the lower leg and foot, especially the peronei and the tibialis posticus, will be in the most favorable position and degree of tension to support the arches of the foot. The pelvis will have its proper inclination of about 30 degrees with the horizontal plane, and the axis of the general abdominal cavity will form nearly a right angle with that of the pelvic cavity, thus warding off from the pelvic organs any direct thrust from the superimposed viscera.

The shoulders will be well back and the chest will exhibit its greatest possible anteroposterior diameter, thus permitting the heart and lungs the greatest ease and amplitude in their excursions. The abdomen will be flat and its parietal muscles in an elastic condition, displacements of the contained viscera being thereby effectually prevented.

Most people do not realize that a tight collar, especially if it is stiff, is causally related to organic disease. Bundling up the neck, living in overheated rooms, and lack of fresh air cause unhealthy states of the nose and throat which predispose to such ills as rheumatism, endocardial infections, middle-ear disease, indigestion, and tuberculosis. A tight collar prevents proper exposure of the neck to the air and to changes of temperature, obstructs the return circulation in the veins of the neck, and impairs the activity of the very important thyroid and parathyroid bodies. I do not mean that all these diseases are caused by tight collars or careless posture; but that exposure of the neck to air, daily out-of-door exercise, and an erect carriage will help to prevent most of them does not admit of doubt. Consider, for example, the part played by high collars and weak muscles in the production of flat chest and tuberculous infection of the lungs. A high, tight collar, by restraining the movements of the head and neck, prevents the development of the platysma myoides and other neck muscles. The neck muscles are important in supporting the ribs and sternum, and if these bones are allowed to sag, the chest will be flattened and decreased in capacity.

During inspiration the chest is raised, expanded, and the air rushes in to fill a partial vacuum. Should the platysma sheet, the sternomastoid, the omohyoid and other neck muscles be weak and the chest walls lack elastic strength, the air will merely indent the flaccid tissue in the supraclavicular spaces and between the ribs instead of passing through the nose to fill and expand the lungs. It will be found that the apices of the lungs are more injured by the muscular weakness than is the rest of the pulmonary area. Undeveloped neck muscles provide an area of least resistance to the pressure of the outside air during inspiration. Thus the apices will continually be in a state of partial collapse and present a fertile field for tuberculous infection. Indeed, the apices of the lungs are the spots in which tuberculous infection is usually first encountered in the adult.

The "nervous" irritation produced by high-boned neckwear should not be overlooked. As a woman once said, "One can usually carry off an unpleasant situation with grace provided that one's collar doesn't dig one." A high collar prevents the neck from becoming acclimated and is, therefore, a predisposing cause of colds, bronchitis, sore throats, and awkward movements which injure the appearance. Women who habitually wear high collars have yellow, wrinkled, and mummy-like skin on their necks.

Let us now consider the feet and footgear and their relation to bodily posture and to organic disease.

For modern footgear very little of a commendatory nature can be said. Orthopedic surgeons have been forced by experience to believe that we are becoming a flat-footed people because of the high-heeled and narrow-toed shoes, which break down the arches of the feet, destroy the elasticity of the gait, and make walking difficult and unpleasant. A natural disinclination to walk in uncomfortable shoes limits the amount of fresh air and outdoor exercise,—when fresh air and outdoor exercise are the very things needed to restore lost tissue tone. A ride in the trolley car or an automobile is not the same; it is

not even "just as good." Indeed, very few people ever walk any considerable distance or know the feel of a shoe which really fits. To a well man or woman whose feet are in good condition, a walk of twenty-five or thirty miles a day is not too long, for when one feels thoroughly well, and has feet, muscles, and organs in good condition, there is a healthy animal impulse to move.

Most of the shoes shown in the shops will fit no one whose toes are not from 30 to 75 per cent. narrower than they should be. No man, unless deformed, is born with a heel wider than the toes and the ball of the foot. The toes should be free to spread easily in walking. No person is ever helped in any way by the use of a high-heeled shoe, unless there is some deformity which requires that one foot be raised higher than its fellow. Most women, especially those of short stature, will say, "My foot has such a high arch that I can't possibly wear a shoe that hasn't a high heel." They persuade themselves that a high heel on a shoe has something to do with the preservation of a high arch to the foot, and each one of them believes that she has a high arch. They also have an obsession that their feet are of the same degree of narrowness as the shoes which are at the time in style. They do not reflect that their feet have been deformed by shoes, or that, were they to take off their shoes and stockings and walk barefoot, the outline of their feet could not possibly come within the outline of their shoes.

Shoes that are too narrow, by pinching the feet, prevent the metatarsal bones and ligaments from yielding and spreading as the weight of the body comes on them in walking, and weaken the transverse arch of the foot through disuse. The fact that the anteroposterior and transverse arches, as well as the metatarsal mechanisms, are put out of commission makes easy, graceful walking impossible, and brings a strain on the anteroposterior arch which it is neither fitted nor able to bear. The tendon of the tibialis posticus, which is of great importance in maintaining both the anteroposterior and transverse arches of the foot, is relaxed when the heel is elevated as by wearing high-heeled shoes. In weak subjects there is relaxation of the tibialis posticus, as well as of all the other muscles of the body, and when the weight of the body is put on the foot the head of the astragalus rotates inward, the whole arch yields, and the sustentaculum tali and scaphoid tubercle drop closer to the ground than is normal, or may even touch it. Whenever the anteroposterior arch is seriously affected it will invariably be found that the transverse arch is flattened. When the transverse arch breaks down there is loss of freedom and elasticity in the gait and painful pressure on the plantar nerves, which pass beneath, not between, the metatarsal bones. Narrow-toed shoes push outward the great toe, deprive the foot of its proper support on the inner side, and cause the foot to be forced by the weight of the body into the valgus position, *i.e.*, the foot is inverted and the arch broken down.

How soon high-heeled and narrow-toed shoes will break down the arches of the feet depends on the weight, strength, and natural resistance of the wearer. No one, however strong and determined, can long sustain the effort necessary to stand erect and hold the spinal column, ribs, sternum, and pelvis, and consequently the abdomen, properly while wearing high-heeled shoes. The

knees of a person who wears high-heeled shoes are bent and look weak because the legs cannot be held straight, and in an attempt to preserve the poise the body is forced into an S-shaped curve which is neither pleasing to the eye nor beneficial to the health. Individuals troubled with flat-foot endeavor to ease the feet by accommodating the posture to that condition. The position giving the feet greatest ease is with the knees slightly bent, the shoulders allowed to sag, and the abdomen to protrude. Such a position strains and stretches the supports of the abdominal organs and at the same time causes partial disuse and atrophy of the muscles of the abdominal wall. This condition of affairs produces visceral displacements with a complex of symptoms known as "Glénard's disease."

The most serious accusation against fashionable footwear is that it upsets the intra-abdominal balance by preventing the wearer from standing or walking in equilibrium. It is easy to show the truth of this. Take off the shoes, raise and throw out the chest, hold up the head, press back the hips and knees, then walk with most of the weight on the ball of the foot, where the burden belongs. This is the correct and natural position for a strong and able-bodied person, and the reason more do not stand in this way is that they are poorly set up and weak. In this posture the abdomen has little tendency to sag and the viscera will be found more nearly in their normal positions. Now, put on a pair of high-heeled shoes or stand with the heels raised one and a half to two inches on a book or a block of wood, which is about the height of the heels worn by would-be-correct people. It will at once become apparent that there is a tendency to bear down and thrust forward on the abdominal contents, and that the abdomen can be held in its proper position only by the constant exercise of force and attention.

Nearly every case of sciatica, metatarsalgia, and "rheumatic pain in the legs" is the direct result of badly fitting shoes, which have either caused flat-foot or which do not support an arch that is already broken down. I do not mean, of course, to class as results of flat-foot conditions due to articular rheumatism or other infective processes. These flat-foot troubles may be relieved by wearing a properly designed shoe into which is built a correctly fitting arch support and by using exercises and appropriate therapeutic measures to re-establish the general health and restore strength and tone to the ligaments and muscles, especially to those concerned in the maintenance of the arches of the feet. To cure flat-foot the patient must be forced to take exercise, to eat in moderation, to reduce the weight if excessive, and to restore tone to the tissues. Flat-footed persons usually lead a life conducive to poor health and flabby tissues, and need building up, even though they may look plump and rosy.

In the shoe trade the dealers do their best to sell shoes which damage the feet and discourage exercise; then they try to sell their victim some flat-foot supports which they promise will repair the damage done. To relieve flat-foot a shoe is needed that is so made as to support the center of the instep just under the joint between the scaphoid and cuboid bones,—a point which corresponds closely to the center of the principal arch of the foot. The amount of upward pressure should be approximately one-twelfth to one-thirteenth of

the body weight of the wearer. Mere pressure on the inside of the foot will not do the work, though it is in this way that most of the flat-foot plates operate. While the foot does drop inward when the arch is broken, yet the way to relieve the pain and deformity is not to hold up the inside of the foot, but to restore the arch. Evidently the keystone of the arch should be replaced and the broken arch has its keystone between the scaphoid, the cuboid, and the internal cuneiform bones.

To prop up a fallen arch it is occasionally necessary to have one or two steel-spring shanks built into the sole of the shoe; it may be advantageous to run the heel forward in a point as far as the middle of the instep, in order to afford a solid point of support under the center of the arch. This is not invariably to be recommended, as it is always best to develop the muscles and to restore tone to the connective tissues which are concerned in maintaining the arch, rather than to depend on a mechanical support. It may, however, be wise to relieve the patient, to the end that exercise will not be so painful that development and restoration of the muscles and tendons of the foot and leg by this means will not be undertaken. As the muscles and tendons regain strength the mechanical supports are to be gradually removed,—until finally the arch becomes self-supporting. In case any mechanical support is used its highest point should be under the center of the arch. Evidently a flat-foot plate which slides around inside the shoe is not a good mechanical device. Such an arrangement can be bought in the shoe stores, but is nearly as useless as the shoes which it is intended to supplement.

Another way the shoeman unconsciously cheats the public is to sell a piece of footgear which he says is, and doubtless believes to be, an "orthopedic" shoe. His idea of an orthopedic shoe seems to be one which will sell for more than the price he could hope to receive for one not bearing that magic name. While the orthopedic shoe is infinitely better than the ordinary variety, yet there cannot be so many interesting varieties of correctly shaped shoes as are advertised. Certain ready-made shoes are constructed with a projection of the heel running forward along the inside of the sole of the shoe. Evidently this is not in the proper place, because it supports the side of the foot and not the center of the arch, where the prop should be placed. The only correct shape for a shoe is one which will fit and easily accommodate the foot after the latter has been stretched by walking barefoot. Such a shoe will have a low, broad heel not over three-quarters of an inch in height; it will fit snugly around the heel and instep, and will have a sole so wide that the spread-out metatarsals do not under any circumstances reach to its edge.

Now as to the connection between constipation and a faulty position of the body.

Constipation, when it is not the result of tumor or other direct mechanical obstruction, may be traced to a weak intestinal or abdominal wall, or to defective blood or nerve supply, or to all these causes acting together. Victims of constipation are unable to use their nerve-muscle apparatus to advantage in other particulars besides defecation. Constipation is the sign of a tired bowel; one might almost say of a "neurasthenic" bowel. We become costive because we

overeat, underexercise, allow our worries to interfere with our digestion, and because we sit, stand, and walk in a relaxed, slovenly manner, or because of some disease which weakens the nerve-gland-muscle apparatus. Therefore, I believe that constipation, when not the result of obstruction, is amenable to hygienic and orthopedic measures, combined with appropriate medical treatment to correct such diseased conditions as tuberculosis, anemia, syphilis, etc. I do not believe at all in the continued use of laxative medicines. About five years ago I began gradually to decrease the use of laxatives and purgatives, and for the past three years I have prescribed none at all; nor has it been necessary to employ any enema more severe than 3 ounces of olive oil, except if there be much tympanites after abdominal section or in such acute diseases as pneumonia or typhoid fever, when it is of advantage to add to the oil ½ ounce of turpentine. If purgation has not been employed tympanites is seldom troublesome.

While it is most desirable to have a daily movement of the bowels, yet it must be remembered that constipation is not the cause of illness; but that illness is the cause of constipation. Healthy men and women need no cascara. Autointoxication, to which is ascribed the headache and various other complaints from which constipated persons do undoubtedly suffer, arises from conditions other than constipation which are themselves important causes of the latter. It is the result of the taking of too much or the wrong kind of food, of insufficient mastication, feeble digestion, and improper splitting and insufficient oxidation of the food after it has been absorbed from the intestinal canal. It is commonly thought that to pass a week without a bowel movement is to invite trouble. No doubt fecal accumulation is a source of disturbance; but I have found that to permit a patient occasionally to lapse a week without a bowel movement does no serious harm. Indeed, it allows the bowels what is sometimes a much-needed rest, and the patients will be found in better condition after a few days without a bowel movement than would have been the case had they been disturbed by meddlesome medication. I have selected the records of 10 cases of extremely obstinate constipation of long standing during the past two years, who were definitely ill in other particulars and did not come merely because they were constipated. In the beginning of the non-purgation treatment some of these persons remained more than a week without a movement of the bowels. Not only did they have no inconvenience therefrom, but they experienced actual relief from persistent headache and backache during the time that the bowels did not move.

In some instances it has been impossible to persuade people to forego their favorite laxative because to do so is opposed to the advice of their friends and physicians. Nevertheless, none of the patients with constipation who followed my directions are now, insofar as I have been able to trace their lives after they had passed from under my direct care, troubled with constipation; nor do they employ any laxative.

In surgery the no-laxative *régime* acts happily, and, though not all of the surgical cases so treated are alive and well, yet none of them died from any cause which could have been even remotely connected with the need of purgation. Some of the cases to which I refer had abdominal section performed

for diseases associated with severe peritonitis. In abdominal operations those patients who were purged before the operation showed more congestion of the intestines than those not purged. In appendicitis it is thoroughly established that purgation causes disaster, and it is no more reasonable to purge before or after any operation than during an attack of appendicitis. If the patient is in a state of shock, purgation only accentuates the trouble. If a patient has peritoneal inflammation, a purge irritates the bowel and accelerates peristalsis when we wish to rest the bowel.

If a horse is tired it is not wise to whip him. Put him in a stable to rest; then he will be able to work without urging. To whip up the tired intestinal nerve-gland-muscle apparatus by purges and laxatives only puts off the day of its recuperation. Everyone who suffers from chronic constipation needs intestinal repose for a few days before the bowels resume their normal movements. During the period of "rest cure" for the bowel it is unwise to allow a full diet, as it is desired to rest the whole intestinal tract. To exhaust further the intestinal mechanism of a neurasthenic while applying the rest treatment to the remainder of the body is manifestly unreasonable. After any injury, mental or physical, which produces the condition which we know as shock, and in nearly all acute diseases, temporary constipation is the rule. Why purge the patient and add to the exhaustion? The whole body needs rest and nothing can be gained by purgation.

Exercise, medication, hygiene, diet, massage, hydrotherapy, and mental suggestion all have a place in treatment. To say that no drugs are needed is, however, wrong, because they are required for the treatment of the underlying pathological state which causes the constipation, the displacement, or the maladjustment. Of these therapeutic measures little need be said, as they are by no means new or untried. Hydrotherapy is especially useful in the orthopedic treatment of visceral disorders, in the form of cool baths with vigorous rubbing, taken after exercise. It is just as valuable under these circumstances as in the treatment of circulatory disorders. Exercise is best taken in the open air and should include walking, running, boxing, horseback riding, and calisthenics. The calisthenics which seem to be decidedly the best are those of the military "setting-up" exercises, which do not require the use of apparatus. A very important point is that all the exercises should be done with the greatest care as regards maintenance of a firm, erect carriage and perfect equilibrium. It is scarcely necessary to add that any and all exercises should be adapted to the peculiarities and physical condition of each individual.

THE CHOLESTERIN REACTION IN THE SERODIAGNOSIS OF LUES.*

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My attention was called to an improved technique in the serodiagnosis of lues by an article by Hermann and Perutz,[1] which appeared some months ago in a German periodical. In this article it was stated that the authors had obtained with the cholesterin reaction results 4 per cent. better than with the Wassermann test, and that the technique was much simpler than the Wassermann test,—in fact, they claimed that the test could be performed in the office of the average physician.

We accordingly decided to investigate this test for ourselves and ascertain whether the claims advanced concerning it were justified. In order to be perfectly fair and just, we made our tests of the 2 reactions simultaneously. Dr. Thomas B. Earley carried out the Wassermann tests and I made the cholesterin tests at the same time, using the same serum for the 2 tests. In twenty hours, when the tests were read, we compared results. We found the cholesterin test much harder to interpret than we had inferred from the author's description, and discarded the first 50 tests as being unreliable. Since then I have carried out 200 tests with the cholesterin technique. (It may be mentioned here that any test for the serodiagnosis of syphilis that depends for the result on the formation of a precipitate is very difficult to interpret, and is bound to be unreliable unless one has had a large experience in reading the test.)

The cholesterin test is, in theory, very similar to the Wassermann test, an antigen being used, except that the latter is an artificial antigen, and not a natural antigen as in the original Wassermann reaction. The test depends on the flaking or precipitation of sodium glycocholate in the presence of syphilitic sera. But the sodium glycocholate precipitated is generally so insignificant that it could easily be overlooked or shaken up. A substance must be added that will increase the amount of precipitation or will be thrown down with the precipitate of sodium glycocholate without disturbing the reaction by its presence. Cholesterin is used for this purpose.

The technique consists of adding to the serum to be tested equal parts of an alcoholic solution of cholesterin and a watery extract of glycocholate of sodium. This mixture is well shaken and allowed to stand at room temperature until the next day. The result is a precipitation in the tubes containing syphilitic serum and no precipitate in the tubes containing non-syphilitic serum. But precisely here comes the difficulty in reading the tests, which renders the test one to be performed only in a laboratory by one of experience, and not in the general practitioner's office, as the authors claimed; for the degree of pre-

* Read at a meeting of the North Branch of the Philadelphia County Medical Society, March 19, 1912.

[1] Medizinische Klinik, Jan. 8, 1911, No. 2.

cipitation necessary to read the tube as a positive reaction can only be recognized after carrying out a number of the tests in different cases. (As already stated, we discarded the first 50 tests because we were not confident of our ability to read the reactions correctly.)

The 200 cases here considered are taken from all classes as they were sent in for the Wassermann test, and include the various stages of syphilis, latent syphilis, paresis, and non-syphilitic but suspected cases.

In determining the percentage of correct and incorrect results we have used the Wassermann reaction as a standard. The reason for doing so is that the Wassermann test, carried out as is our custom, using the original Wassermann technique with a natural antigen, has given us, insofar as we are able to determine, 100 per cent. of correct results. Comparing now the two tests, our findings are as follows:—

In 169 cases, reaction same as with the Wassermann.
In 31 cases, reaction differed from the Wassermann.

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This gives 18.3 per cent. of tests which differed from the Wassermann, and in our opinion the test is just that much less accurate than the Wassermann reaction. Not that the cholesterin reaction is poor as a test. It is a good test, giving accurate results in nearly 82 per cent. of cases, but it is inferior to our Wassermann test by 18.3 per cent.

Thus, while the German authors claimed 4 per cent. better results with this test than with the Wassermann, we found the test less accurate by 18.3 per cent. The reason for this is clear when we find that the originators of the cholesterin test used in their Wassermann control reactions an artificial antigen. It has lately been proven by Plaught and others that in a series of reactions with the Wassermann technique, using artificial antigen, carried out against a series in which the natural antigen was used, the natural-antigen series was always the more accurate. Our cholesterin tests therefore gave a lower percentage of accurate results, when compard with the Wassermann reaction, than those of the German observers because our Wassermann technique was more accurate than theirs.

Of the 31 tests which resulted differently from the Wassermann test, 23 were negative when the Wassermann was positive, while only 8 went positive when the Wassermann was negative, showing that in only about 3 per cent. of cases could the test go wrong in denoting syphilis when none was present.

In conclusion we may state that:—

1. The cholesterin test is valuable as a control to the Wassermann test, for when both tests result likewise—either positively or negatively—we do not think it necessary to repeat. If they differ, we repeat the Wassermann test with a watery antigen and abide by the result.

2. Our Wassermann test so far shows 100 per cent. of correct results as proven by the histories and clinical courses of the cases tested; therefore, the cholesterin test must be less accurate.

3. The cholesterin test can never be used as a simple test for syphilis in the doctor's office, as it demands just as accurate a technique as the Wassermann test, and a large experience in reading the results is required before one becomes expert enough to decide the extremely important question of "Has or has not this patient syphilis?"

THE GENESIS OF THE HEART BEAT.

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The reason why the heart muscle contracts is of great importance to us, not only as physiologists, but as practical physicians. The highest aim of the medical profession is to cure disease, or, better still, to prevent disease. In addition to the various lesions of the heart itself, the condition of that organ is of the utmost importance in every variation of the body from the normal state. Whether the condition present be acute or chronic, medical or surgical, we always investigate the heart and feel better satisfied if it is in good working order. When such is not the case one of our aims is to give such treatment as will restore normal activity, for it is by means of the heart that circulation of the blood is maintained, nutritive material carried to all the tissues of the body, and waste matters removed. When the heart is not adequately performing its function it inevitably follows that the tissues do not receive the pabulum they need to maintain them in a state of health, and at the same time the waste products of metabolism accumulate and exert a deleterious influence on the tissue-cells.

The importance of normal heart action being recognized, it follows that in order rationally to prescribe treatment with the view of restoring a disordered heart to normal we must know what the factors are that cause the heart muscle to contract in its characteristic rhythmical manner.

The cause of the heart beat has naturally constituted one of the fundamental objects of physiological inquiry, and different views have been held with each new discovery. The modern conception of the cause of the contraction of the cardiac muscle is to be attributed to Haller. In 1757 this observer first taught that the activity of the heart is not dependent on its connections with the central nervous system. Cardiac activity is controlled and influenced constantly by the central nervous system, but he established beyond question the important point that the heart continues to beat after all nervous connections have been severed. Haller, therefore, concluded that the central nervous system regulates the activity of the heart, but has nothing to do with the cause of the rhythmical contractions. He designated the heart as an automatic organ.

Remak, in 1848, discovered nerve-cells in the frog's heart and attributed the beat to them. Nerve-cells were then found to be present in the substance

of the heart tissue of all vertebrates, and during the middle and latter part of the nineteenth century the automaticity of the heart was believed to be due to the properties of its contained nerve-cells. This constitutes the "neurogenic theory of the heart beat." In the latter part of the same century the opposite view became the prevalent one. This is known as the "myogenic theory of the heart beat," and rests on the belief that the muscular tissue of the heart possesses automatic rhythmical contractility. With either of these theories we still have to solve the deeper problem of the automaticity itself,—the cause or causes of the rhythmical excitation; whether it occurs primarily in the muscle-cells or nerve-cells.

The investigations of William Harvey (1628) form the dividing line between the ancient and modern views of the heart beat. Hippocrates and Galen believed diastole to be the active part of the beat. Harvey proved that the active movement of the heart is contraction during systole, and that the contraction is not dependent upon any external influence. Harvey was closely followed by Willis, who propounded the neurogenic theory. He taught that the cerebellum controls the activity of the involuntary organs. With Haller (1757), the myogenic theory came into prominence for the second time. His belief was that the contraction is due to the inherent irritability of the muscle and that it is excited by the venous blood. The work of Remak upon the ganglia of the heart has been mentioned. Experiments on frogs and tortoises reported by Gaskell (1881) support the myogenic theory and give evidence that the intrinsic ganglia of the heart form part of the cardiac inhibitory apparatus.

The neurogenic theory attributed the origin of the excitation of each beat to the nerve-cells located at the junction of the great veins with the right auricle. This was considered the chief automatic motor center of the heart. From this center the impulse was believed to be transmitted to the subordinate nerve-centers in various parts of the heart. The myogenic theory is chiefly the outcome of the work of Gaskell and Engelmann, and rests on the belief that the heart muscle itself possesses the property of automatic rhythmical contraction. This property is most highly developed at the venous end of the heart and is transmitted by the muscle-fibers. One of Engelmann's experiments was to cut the ventricle in zigzag fashion, leaving irregular strips connected by narrow bridges. On stimulating at one end a wave of contraction is started which propagates itself over all the pieces. If a ligature be tied tightly at the junction of the great veins with the heart, the heart will stop beating. This is known as the first ligature of Stannius. Now, after the heart has ceased beating, if the ventricle be irritated a reversed rhythm will result, *i.e.*, the ventricle will contract first and then the auricles, instead of the normal sequence of auricular contraction followed by ventricular. In such an experiment the contraction is probably carried from the muscle of the ventricle to the auricles by means of the band of muscle-tissue that connects auricles and ventricles. With our present knowledge of the nervous system we cannot conceive of definitely arranged nerve-cells with their fibers conveying impulses in opposite directions.

Isolated strips of heart muscle will contract rhythmically, and it is very unlikely that each of these pieces of muscle, irregularly cut from the heart, should contain its own group of motor nerve-cells capable of sending out rhythmical impulses. Moreover, pieces of muscle cut from the apex of the heart, where ganglion-cells cannot be shown to exist, will exhibit rhythmical contractions. As the part removed contains no nerve-cells the contractions can arise only in the muscular tissue. Furthermore, the embryonic heart muscle has rhythmical contractile power, for the cardiac rhythm is established before the ganglion-cells grow into the heart.

We are prone to regard the heart solely as a muscle and to attempt to explain its activity by comparison with the other types of muscle with which we are familiar. In so doing we lose sight of the fact that the heart is an organ with a definite function to perform. Every tissue and organ of the body is the result of proliferation of the original germ-cells, with differentiation and specialization of those cells so that the mature cells are capable of performing a definite kind of work in the economy. Just as the liver or kidney is an organ composed of cells specialized to perform certain functions, so is the heart an organ composed of cells whose duty it is to contract rhythmically and force the blood through the blood-vessels. These organs as they exist in the mammalia are the result of development through many generations, each group of cells inheriting its tendency to perform a certain function.

Romberg isolated portions of the rabbit's heart devoid of ganglia by crushing, but maintained the circulation, and these pieces pulsated for hours. Excision of the entire septum of the frog's heart, including Remak's ganglion, has no disturbing effect on the beat.

The heart beat, however, is undoubtedly under nervous control, and this control is exercised in an inhibitory manner. Without the control of the nervous system the heart would beat more rapidly and more forcibly than necessary. This inhibitory influence is exerted through the pneumogastric nerve. The cardiac branch of the pneumogastric nerve terminates in relation with ganglion-cells located at the junction of the great veins with the right auricle. From these nerve-cells fibers pass to the heart muscle. When a ligature is tied at the position of these ganglion-cells the heart stops beating (first ligature of Stannius). Cardiac activity ceases because the wave of contraction originating in the great veins is cut off from the heart and because the inhibitory cells are mechanically stimulated. If another ligature be tied around the auriculoventricular groove the ventricle contracts again (second ligature of Stannius). The ventricle beats because the inhibitory impulses are cut off and because the muscle is mechanically stimulated. Constant stimulation of heart muscle causes rhythmic contractions.

The heart pulsates when excised. This is not due to the blood in the cavities of the heart, for the latter contracts when its cavities are empty. It is not due to contact of the air, for the heart pulsates in a vacuum. It is not due to irritation received from the nervous system, for the heart is not connected with the nervous system, and it is not due to the ganglia, for portions without ganglia will pulsate. The muscle is irritable, and for this irritability nutrition

is necessary. Erichsen exposed the heart in warm-blooded animals, instituted artificial respiration, and ligated the coronary arteries. In 6 experiments the heart ceased beating in twenty-three and one-half minutes. Activity was restored by removing the ligatures from the coronary arteries and allowing the blood to circulate in the substance of the heart.

The demonstration that the nerve-cells are not essential to contraction places us one step nearer the true cause of contraction. The heart is automatic, *i.e.*, the stimuli which excite it to activity originate within the heart itself. This agency is called the "inner stimulus," and in attempting to discover the nature of this stimulus particular attention has been drawn to the influence of the chlorides of sodium, calcium, and potassium. These salts are brought to the heart muscle by the blood and must be present in certain definite proportions. The sodium chloride maintains the normal osmotic pressure between the muscle-fibers and the surrounding lymph. The calcium chloride acts to maintain normal contractility and irritability of the muscle, while the potassium chloride promotes relaxation of the muscle and regulates the rate and force of the beat.

In the light of our present knowledge we conclude that the heart is an organ with a definite function to fulfill and possessing an inherited tendency to contract rhythmically in order to perform that function, that its activity is regulated by the nervous system, and that its continued action is dependent on the maintenance of its nutrition together with the supplying to it of certain inorganic salts in proper proportions.

Cyclopedia of Current Literature

ACNE, VACCINE TREATMENT OF.

While the acne bacillus plays a large part in the infective processes of acne, that it is the primary cause of the disease and produces the hyperkeratosis of the outlets of the ducts and the hypertrophy and loss of function of the glands themselves is not accepted by all observers. Yet the bacillus can be found in smears from all cases of acne and plays an equal if not greater part than the staphylococcus. Like the latter, the acne bacillus can be found in the skin of individuals who are not, nor ever have been, sufferers from the disease.

The author used vaccines in the treatment of about 50 cases of acne. The acne bacillus was grown on 2 per cent. glucose agar slants under anaërobic conditions. Most of the cases treated were well advanced and showed indurated and pustular lesions. About one-third were treated by staphylococcic vaccine alone; of the remainder some received autogenous vaccine, while for the rest a polyvalent stock emulsion was used made up from cultures obtained from the first series. In all cases smears were taken from the lesions; the acne bacillus was found in every instance, though in varying numbers. The constitutional treatment consisted merely of the correction of any digestive disturbance and regulation of the bowels, while locally a mild antiseptic lotion was employed to prevent a surface spreading of the infection.

The injections were begun with 3,000,000 acne bacilli and 150,000,000 staphylococci. In no case was 5,000,000 acne and 250,000,000 staphylococci exceeded during the treatment. The frequency averaged about one injection every five days. Abscesses and the larger pustules were wiped over with alcohol and incised before treatment was begun, and the comedones were removed as thoroughly as possible.

Between the results obtained in the two series little remained to choose. All the patients showed marked improvement. The conclusions reached were that: 1, the results obtained with the polyvalent acne stock vaccine were fully as satisfactory as those obtained with an autogenous vaccine; 2, much more depended on a careful oversight of the case, regulation of the amount and frequency of dosage, and general hygienic care, than on the fact that vaccines used were autogenous; 3, old emulsions produced a more rapid immunity with less danger of local reaction or anaphylaxis than those freshly prepared. E. D. Lovejoy (American Journal of the Medical Sciences, May, 1912).

APPENDICITIS, TREATMENT OF ACUTE.

It has been proved, the author remarks, that aperients not only excite activity in the small and large intestines, but render secretion more abundant and considerably increase bacterial virulence. Many cases have come under his observation in which, he is practically certain, perforation of the appendix and diffuse peritonitis were due to the injudicious administration of purgatives. A common history in such cases is that a few hours before the onset of pain the patient partook of a hearty meal, or ate something which supposedly disagreed with him, and that, acting upon this assumption, a brisk purgative was given. A few hours later, instead of the expected relief, the pain had increased in severity, and when the patient was seen there was abdominal rigidity, either limited to the appendicial region or general.

In acute appendicitis, even though perforation ensues, if purgatives are not given and absolute starvation is enforced, diffuse peritonitis does not as a rule supervene, a localized abscess usually developing. This fact affords the best indication for treatment: At the onset all food by mouth should be withheld in order to arrest peristalsis and reduce the virulence of the bacteria within the bowel. No purgative should be administered, and even the giving of fluids, which must reach the cecum to be absorbed, should be avoided.

In spite of the undoubted advantages of the so-called "starvation treatment" of appendicitis, the author is strongly of the opinion that early or immediate operation is the safest procedure. Operation should be performed as soon as the diagnosis is made, and the appendix removed if possible. In cases of diffuse peritonitis the author invariably removes the appendix, and also almost always in cases of localized suppuration. It should be borne in mind that the initial symptom, acute pain, does not indicate the onset of appendicitis, but of the peritonitis resulting from it. If a purgative has been given in a case of acute appendicitis, this fact should furnish an urgent reason for advising immediate operation. This is even more imperative in children than adults; all cases of acute appendicitis in children should be treated surgically. The symptoms present in adults are often lacking in children. A rectal examination should be carried out as a routine procedure in every case of acute abdominal disease in a child, as in this

way it is possible to explore a considerable portion of the peritoneal cavity. In deciding for or against operation, it should be remembered that sudden cessation of pain after a typical onset is by no means uncommon. In such cases operation should be hastened rather than delayed, as relief of pain may be due to sudden rupture of the distended appendix or the supervention of gangrene. Herbert A. Bruce (Canadian Medical Association Journal, May, 1912).

BRONCHIAL ASTHMA, TREATMENT OF.

In one of the prevailing theories concerning the causation of asthma, this affection is regarded as a species of urticaria of the bronchial mucous membrane. Again, it is well known that excessive irritability of the nervous system is a most important factor. In view of the fact that, as recently observed, rapid subsidence of urticaria may follow the internal use of calcium chloride, and since, also, calcium salts have been shown to exert, in appropriate dosage, a sedative influence on the central nervous system, the author took up the use of calcium chloride in bronchial asthma and hay fever. A notable prophylactic action of the salt in asthma was observed. After the administration for three or four days of a tablespoonful of 5 per cent. calcium chloride in milk, every two hours, the paroxysms ceased. The respiration became freer, sleep returned, and the bronchial secretion diminished. In many cases the paroxysms did not return for several months. When the drug is given it should be continued for a week. No untoward effects from its use were observed. Kayser (Therapeutische Monatshefte, March, 1912).

CITRIC ACID, THERAPEUTIC USES OF.

Lemonade, the citric fruits, and the citrates have long been used empirically in a variety of conditions with excellent results. The action has been explained as due to diaphoresis and diuresis. Recently acquired knowledge has, however, served to show that citric acid acts in other ways than these. An important action it possesses is to facilitate the flow of blood through the vessels by reducing its viscosity. This effect may be directly traced to the action of citric acid on the colloid constituents of the blood, which it tends to convert from the "gel" to the more fluid "sol" condition.

Again, to counteract a tendency to exosmosis from the tissue-cells the citrates (not the acid) may be used to raise the specific gravity of the cell contents by dialysis. Where it is desired to secure the action of a base such as iron, copper or other heavy metals, upon the contents of tissue-cells, the administration of this base in combination with citric acid is of advantage.

In cases of threatened eclampsia, with marked edema and albuminuria, the author found citric acid of great value. The indications being in such cases promptly to reduce the viscosity of the blood, stimulate bowel action and induce diuresis, he would advise the use of the following:—

℞ Acidi citrici, 30 Gm. (7½ drams).
Liquoris sodii phosphatis comp., 80 Gm. (2½ ounces).
Aquæ, 40 Gm. (10 drams).

M. Sig.: One teaspoonful in a full glass of water every three hours; later, twenty minutes before each meal and at bedtime.

E. J. Ford had a case of edema of the pharynx which threatened life. When citric acid was given, improvement began immediately, and within a few days the patient had recovered. In thrombotic apoplexy the author obtained excellent results through early reduction of the viscosity of the blood by means of citric acid.

Where a rheumatic or gouty condition is present, so that it is necessary to use the salicylates, a citrate should be substituted for citric acid:—

℞ Sodii citratis, 30 Gm. (7½ drams).
Sodii salicylatis, 20 Gm. (5 drams).
Aquæ, 120 Gm. (30 drams).

M. Sig.: One teaspoonful in a cup of hot water half an hour before each meal and at bedtime.

Such a prescription is useful even before pain develops in cases in which there is gastric and intestinal fermentation. If intestinal fermentation is the more marked, part of the salicylate may be given as phenyl salicylate, and because of its insolubility, the drugs given in capsule.

Where the action of citric acid on the blood is solely or chiefly desired, it may be given thus:—

℞ Acidi citrici, 60 Gm. (15 drams).
[For milder cases, 10 Gm. (2½ drams)].
Aquæ, 120 Gm. (30 drams).

M. Sig.: One teaspoonful in a glass of sweetened water three times a day.

If the stomach rebels, or if the patient is an infant, part or all of the acid may be given in the form of sodium or potassium citrate.

In cases of anemia, where one desires to increase the amount of iron in the red corpuscles, the following is suggested:—

℞ Acidi citrici, 15 Gm. (3¾ drams).
Ferri citratis solubilis, 4 Gm. (1 dram).
Aquæ, 120 Gm. (30 drams).

M. Sig.: One teaspoonful with water before each meal and at bedtime.

Patients who at first object to doses of 0.1 Gm. (1½ grains) later take many times that amount without ill effects. In catarrhal conditions of the stomach, with large quantities of viscid mucus, citric acid frequently gives quick relief, and digestion is improved. These cases are generally complicated with amylaceous dyspepsia, and the carbohydrates must be withheld from the dietary. In acute gastritis, sodium or potassium citrate is generally to be preferred to the acid, and large quantities of water should be given. H. B. Hemenway (Journal of the American Medical Association, April 6, 1912).

ECZEMA RUBRUM OF LOWER EXTREMITIES, TREATMENT OF.

The majority of patients with this condition, the author remarks, show an increase in body weight, an intake of food greater than the output, indulgence in alcohol to greater or less excess, a very sedentary mode of life or a position requiring continuous standing, clogging of the intestinal tract, an excess of solids and indoxyl in the urine, and frequently varices of the superficial veins. Appropriate corrective measures and internal treatment are therefore of great importance. The intake of meats and sweets should be greatly limited, alcohol interdicted, and the bowels caused to move daily. The patient must have a certain amount of fresh air and at least eight hours' sleep.

Locally, the first indication is to remove surgically any varices present. This can be done at almost any stage of the eruption, as the enlarged veins are generally above the eczematous area. Should this happen not to be the case, the eczema had best be relieved and the veins then operated upon, thereby reducing greatly the chance of recurrence of the eruption.

Excellent results were obtained by the author in treating eczema rubrum of the legs with a solid rubber bandage, as recommended by Bulkley. Pieces of ordinary surgical lint, cut so that the borders just meet are first applied around the leg. The woolly side of the

lint is covered thickly with the salve to be used and applied snugly to the diseased area. The rubber bandage, of very thin rubber and capable of much stretching, is then put on. It is about 3 inches wide and 5 yards long (should it be necessary to carry it to the thigh, a longer bandage is required). No matter how small the area of eruption, the bandage is best applied from the toes to the knee, overlapping about one-third of its width, without reversing. The heel must be left free. With only a slight amount of care, an even degree of pressure can be maintained, and the comfort of the bandage elicited by having the patient stand and walk about.

At night the bandage and dressings are removed preferably after the patient is entirely ready for bed. The bandage is washed in a dilute solution of phenol (1 dram to the pint), drawn through a dry towel, draped over the back of a chair, and left to dry overnight. The leg, with the accumulated secretions, should be washed off with some weak antiseptic solution, preferably phenol, a large piece of cotton being used as a sponge. The leg is next gently dried with absorbent cotton, and an astringent cooling lotion then applied twice, at a fifteen-minute interval. If there should be itching during the night, a piece of cloth wet with the lotion should be applied. In the morning, before the patient arises, the leg is dressed and the rubber bandage re-applied. Should any dressings have been used during the night and become adherent, they should not be forcibly torn off, but first moistened with olive oil.

The advisability of using the rubber bandage in the very acute stages of the affection has been questioned by some, but the author has seen nothing but good results from it. P. E. Bechet (Medical Record, March 16, 1912).

GONORRHEA, TREATMENT OF ACUTE.

Stress is laid by the author on the necessity for applying treatment early if results in any way comparable to an abortion of the disease are to be secured. The gonococcus should be reached while it is still on the surface of the urethral mucous membrane. The procedure recommended by the writer consists in injecting into the urethra 1½ drams (6 c.c.) of a 1:6 solution of argyrol. The injection should be made slowly, so that no pain is occasioned, and the fluid retained for five minutes. After the injection the patient should stay as long as possible without urinating. Two injections should be given by the physician daily, one in the morning and the other in the evening. In the interval the patient should himself make 2 injections of a 1:25 solution, the total number of injections *per diem* being thus 4. Patients treated in this way in the earliest stage of gonorrhea are cured in from two to five days. The stronger injections should be continued until the urethra is dry and all inflammatory redness has disappeared. After this the patient may himself keep on injecting a weak solution of the drug. Minet (Revue moderne de médecine et de chirurgie; Revue de thérapeutique médico-chirurgicale, Mar. 15, 1912).

GONORRHEAL CONJUNCTIVITIS, TREATMENT OF.

A new method of treating this affection is advocated by the author, which is based on the facts that gonococci are rapidly killed by a temperature slightly exceeding the normal body temperature, and that they are situated almost invariably only in the epithelial layer of the conjunctiva. The latter, being superficial and easily exposed, lends itself well to local treatment by heat. Dry heat is liable to injure the cornea

by the withdrawal of fluid, and steam is therefore preferable. It was generated by electricity in a boiler small enough to be as easily manipulated as any other instrument for operations on the eye. Below the tube through which the steam escaped another tube was fitted to catch the drops of condensed steam which would otherwise have scalded the patient's face.

The temperature of the steam impinging on a screen at a distance of 4 centimeters from the mouth of the tube was found to be 113° F. This temperature causes considerable pain, and cocaine is valueless, for it has no influence on the sensations of heat and cold. After a while, however, the treatment becomes so painless that even children stand it easily. No ill-effects resulted from the treatment, but some difficulty was experienced in everting the swollen and brawny upper eyelids, which sometimes required the application of iced compresses to reduce the infiltration. The delay thus caused is not, however, serious, for corneal infiltration or ulceration seldom occurs at this stage.

As soon as eversion of the eyelids is practicable, the conjunctival sac is first syringed with a solution of potassium permanganate, then dried with gauze, after which the steam is applied. When there is much chemosis, the ocular as well as the palpebral conjunctiva should be steamed, great care being taken to avoid injuring the cornea. The skin in the neighborhood of the eyes is protected from the steam by layers of linen or wet gauze.

In the course of three months 15 cases were thus treated. All were severe, and in 5 ulceration of the cornea existed at the beginning of the treatment. The 10 patients with corneas uninvolved made a rapid and complete recovery, the chemosis and discharge practically disappearing in four days. In the 5 patients with corneas already involved, the conjunctivitis was cured and prevented from being longer a source of infection to others; in 1 case complete recovery of the cornea was also effected.

Although the steam rapidly reduces the discharge, some conjunctival swelling may persist for a time, as the steam tends to relax the blood-vessels and thus cause passive hyperemia. It is unnecessary to reduce this swelling by the application of silver nitrate; syringing with potassium permanganate suffices.

Comparing the steam method with the silver nitrate treatment, the author points out that the latter is very imperfect, as it forms a deposit in the epithelium which becomes impermeable, and thus prevents the further action of the nitrate on the deeper layers of the conjunctiva. The gonococci also lurk in epithelial crypts and in the upper fornix, where they are difficult to attack with silver nitrate. He therefore concludes that the steam treatment is the better of the two, although it requires considerable technical dexterity. W. Goldzieher (Wiener klinische Wochenschrift; Lancet, March 2, 1912).

INFECTIONS OF EXTREMITIES, TREATMENT OF.

The author, in dealing with infections of limbs, more particularly thecal whitlow, has tried out the plan of treatment recommended by Waterhouse, viz., the making of a preliminary puncture incision and the application of a constricting bandage above the seat of inflammation. To these measures he has added the use of Wright's solution of sodium citrate, with good results. His procedure is now as follows: Having made the preliminary puncture incision,

to give exit to the pus, and applied the Martin bandage above the elbow or knee, the finger or toe, hand or foot is immersed in a vessel containing hot Wright's solution. The hyperemia produced by the heated solution augments that due to the rubber bandage. The sodium citrate maintains the fluidity of the lymph and blood, while the sodium chloride expedites osmotic transudation of serum from the engorged vessels. It is well also, gently to irrigate the depths of the wound with this solution through a cannula at the outset. Within a few minutes the pain is alleviated, and improvement is very rapid. The rubber bandage is now removed, sufficient rubber drainage inserted, a drain-poultice of gauze saturated with Wright's solution applied, equalization of circulation established by a compression pad of non-absorbent cotton, and the dressing completed by a muslin roller-bandage secured by pins, and by elevation of the part.

Before dismissal the patient is directed to obtain some sodium citrate and to make up the solution for home use by adding to a glass of hot water about 2½ teaspoonfuls of common salt and a large teaspoonful of the citrate. With this he keeps the dressing moist and warm. He is also directed to apply a rubber bandage, with the usual precautions, for thirty minutes every three hours.

In the absence of septicemia, the patient is given an injection of a small dose of polyvalent stock bacterins of pyogenic organisms. In the presence of septicemia a strong dose of well-prepared antistaphylococcic serum may be injected. An autogenous bacterin is to be prepared as soon as possible.

These measures the author considers the most effectual at command for rapid mastery of such infections. Hydrogen peroxide should not be used until the wound becomes flat and shallow. The wound should never be squeezed. A weak solution of iodine may be injected into it occasionally.

Everything possible should be done to restore function to fingers ravaged by pyogenic infection. Judicious massage and passive motion are often of great efficacy. More attention should be devoted to restoring mobility by reconstructing tendons and joints. Portions of the palmaris longus tendon may be used to replace other tendons that have been destroyed, while tendon sheaths might be supplied by transplanting portions of fascia lata, a method recently shown to be very successful.

According to Waterhouse, the pain ensuing upon constriction with the rubber bandage is diagnostic of the absence or presence of pus, in doubtful cases, previous to incision. If there is no pus, relief of pain follows in five or ten minutes; if there is pus great pain ensues in a minute or two. P. G. Skillern (Journal of the American Medical Association, March 16, 1912).

MENINGITIS, CONTROLLING THE ADMINISTRATION OF SERUM IN EPIDEMIC,

In the ordinary method of administering antimeningococcic serum after lumbar puncture, there is no reliable guide indicating the quantity of serum one can safely inject. The procedure is therefore inaccurate and sometimes even dangerous, a slight excess of fluid introduced sometimes causing a sudden marked drop in blood-pressure and more or less serious disturbances of the respiration and heart action.

After making blood-pressure readings in about 200 cases of meningitis, in which, altogether, about 600 lumbar punctures were done, the author has become

convinced that blood-pressure change is a very accurate guide to the amount of serum that can be safely injected, frequently also indicating the quantity of cerebrospinal fluid that can be withdrawn. In administering serum he now usually has one assistant take blood-pressure readings throughout the whole procedure. If the pressure drops, as it generally does, during the removal of cerebrospinal fluid, he uses it as a guide to the withdrawal of fluid, stopping when there has been a drop of 10 mm. of mercury in adults or of 5 mm. in children. The blood-pressure is next taken as an absolute guide as to the quantity of serum to be injected as well as the speed of its injection. Very rapid injection under considerable force will generally cause a greater drop in pressure than a slow injection. The serum is allowed to run in by gravity, the funnel being raised or lowered to regulate the flow. The barrel of a 10 to 15 c.c. antitoxin syringe may be used as the funnel, attached to about 12 inches of rubber tubing ¼ inch in diameter. Ten minutes is the average time allowed for the fluid to run in. A total drop of 20 mm. of mercury in an adult with average blood-pressure is taken as the signal to stop injecting serum. It is to be noted that after there has been a material steady descent of, *e.g.*, 20 to 30 mm., the pressure begins to drop relatively much faster sometimes if even only a few more cubic centimeters of serum are added. Occasionally there is an initial temporary rise in blood-pressure, but only very rarely a sustained rise.

Since the author began using this method, the average dose of serum injected has been considerably smaller than before,—20 to 25 c.c. in adults and in proportion in children. Judging from the good results obtained with the smaller doses, he believes it only very rarely necessary or beneficial to inject more than a maximum of 40 c.c. of serum. The general reaction following the injections was usually not as severe as formerly; the temperature did not rise as much, and the patient was generally more comfortable. Young children, about or under 1 year especially, at times could not bear more than 2 to 4 c.c. of serum, yet often responded extremely well. In 185 cases the total mortality was 25 per cent., this including many who were brought to the hospital in very bad condition.

Regarding cases in which, for some reason, a sudden drop in pressure, with disordered respiration and circulation, takes place during an injection of serum, the author states that the indication is at once to remove fluid from the spinal canal. This is easily done, with the gravity method, by lowering the funnel. Where breathing stops, as much fluid as possible should be removed and active artificial respiration begun. Epinephrin in large doses by intramuscular injection with other vasomotor stimulants and atropine, help. Even with severe symptoms, the patient usually responds to these measures.

General anesthesia during the operation is dangerous. It should be used only in violent patients, and the blood-pressure watched. In many cases, especially in children, merely giving the patient water to suck through a straw will keep him quiet. A. Sophian (Journal of the American Medical Association, March 23, 1912).

NASAL CATARRH, TREATMENT OF.

A warning is sounded by the author against syringing of the nose in this condition. The most that should be done is to use a coarse spray containing

a warm alkaline solution, which may be sniffed up frequently as the spraying is being carried out. Only gentle sniffing of fluids into the nose is warranted.

Where the desire is only to clear and moisten the nasal passages, the following formula is useful:—

℞ Sodii chloridi,
Sodii salicylatis, of each, gr. xlv (3 Gm.).
Sodii boratis,
Potassii chloratis, of each, gr. xcvj. (6.5 Gm.).
Glycerini, f℥j (4 c.c.).
Aquæ, f℥vj (200 c.c.).—M.

Of this mixture 2 teaspoonfuls should be added to 1 ounce of warm water and used to spray or sniff up into the nostrils occasionally.

When fetor is present a combination of phenol, 1 grain (0.06 Gm.), and sodium bicarbonate, 4 grains (0.024 Gm.), to the ounce (32 c.c.) of warm water is recommended. Sodium sulphate, 20 grains (1.3 Gm.) to the ounce, is also advantageous for dissolving away purulent discharges.

All lotions applied to the inside of the nose should be lukewarm, and no irritating remedy should ever be used.

The discharge should always be examined bacteriologically so that the relative virulence of the organisms may be known. The more innocent, such as the micrococcus catarrhalis, the bacillus of Friedländer and the diplococcus coryzæ are often easily eradicated by the simple measures described, whereas when pneumococci, streptococci, staphylococci, etc., are present more difficulty is encountered, and serious consequences are more to be apprehended. The persons susceptible to recurrent catarrh are those possessing intranasal irregularities, and the best preventive treatment consists in removal of such abnormalities, generally by surgical treatment. In those in whom surgery is inadequate, the author looks to vaccines as a refuge. If the catarrh be kept up by a septic frontal or maxillary antritis, these sinuses should be washed out daily for a week with a warm antiseptic solution, and if there be then no improvement surgical methods become imperative.

When the catarrh is post-nasal the discharge tends to accumulate in the nasopharynx. In these circumstances a menthol inhalation, such as menthol, 10 grains (0.6 Gm.), spirits of wine, 1 dram (4 c.c.), to 1 ounce (30 c.c.) of water, is very useful. One teaspoonful of this mixture is placed in ¾ pint of nearly boiling water, and the vapor is to be inhaled through the mouth and exhaled through the nose for ten minutes every two hours.

In most cases after the discharge has been thinned, moistened, and most likely only partially removed by sniffing up the nostrils a warm antiseptic alkaline soothing lotion, the application of a soft ointment is very grateful to the patient. It is best to begin with one of very weak composition, such as menthol, 4 grains (0.24 Gm.), to 1 ounce (32 Gms.) of yellow petrolatum, together with 20 minims (1.25 c.c.) of eucalyptol. Two to four grains of cocaine may be added if there be much congestion or signs of inflammation. Should the trouble lie in the middle turbinal region or above and behind it, an anterior nasal atomizer is useful to carry the ointment (rendered liquid in parolein, and with the constituents in slightly stronger proportions) to the higher parts of the nose.

Paper handkerchiefs should be substituted for the usual linen pocket-handkerchief. Ordering the patient to get a new suit of clothes has often greatly aided the author in curing a severe nasal catarrh, the pockets having become con-

taminated and renewing the infection in the nose through the handkerchief. In conclusion, no nasal catarrh should ever be neglected or looked upon as incurable. W. Stuart-Low (Practitioner, April, 1912).

NEO-SALVARSAN.

Whereas salvarsan, dissolved in salt solution, yields a fluid which is acid in reaction and requires neutralization with sodium hydroxide before use, Ehrlich's new product, neo-salvarsan, dissolves directly to form a neutral solution which, furthermore, is isotonic.

The author, in discussing the new drug, cites a case of syphilis in the primary stage which within ten days had been given 3 injections of neo-salvarsan consisting, respectively, of 0.45, 0.50, and 0.65 Gm. Notwithstanding the smallness of these doses (Schreiber counsels the injection of 1.10 Gm. as a routine), the 2 initial lesions present in this patient had completely healed by the tenth day. Examination with the ultramicroscope twenty-four hours after the first injection showed that the spirochetes had already entirely disappeared at that time. The author emphasizes the fact that only very slight constitutional reactions follow the use of neo-salvarsan, in contrast with the more marked untoward phenomena sometimes witnessed after the older drug. Queyrat (Société Médicale des Hôpitaux, Paris; Bulletin médical, May 18, 1912).

PANCREAS, CANCER OF BODY AND TAIL OF.

That primary cancers of the pancreas, especially of the body and tail, are rarely diagnosticated is rather surprising, as they give rise to a very characteristic combination of symptoms. These are stated by the author to be as follows:—

1. Pain, one of the earliest symptoms of pancreatic disease, is either constant or paroxysmal, and is very intense. It is usually accompanied by a general feeling of distress and prostration. It is not aggravated by food and radiates, if the body and tail only of the organ are involved, toward the left as far as the scapula. It is often localized in the splenic region, and is probably due to pressure on the solar plexus or invasion of neighboring viscera.

By deep palpation, tenderness can be elicited at a point midway between the umbilicus and the free border of the left ribs. This zone of exquisite tenderness was found present by the author in 3 cases and is considered by him strongly suggestive of pancreatic disease.

2. A tumor mass is palpable in a small percentage of cases,—20 to 25 per cent., according to Mirallie. Such a mass can usually be differentiated from the stomach and intestines by inflating the latter organs, a pancreatic tumor disappearing whereas a gastrointestinal tumor becomes more evident. From aneurism of the abdominal aorta a pancreatic tumor overlying this vessel can be distinguished by the non-expansile character of the pulsation.

3. The gall-bladder is dilated, as a rule, in cancer of the pancreas—a cardinal sign, according to Bard and Pic, which is of use in differentiating pancreatic disease from cholelithiasis. The liver generally remains small, or enlarges very slightly.

4. Fever is usually absent, the temperature being rather subnormal, in fact, even to the time of death.

5. Ascites, due to pressure on the portal vein, may be well marked in rapidly growing tumors with metastasis, but in the slowly growing form is not found until very late.

6. Hemorrhages may be seen in the skin, mucous membranes and subcutaneous tissues. A few cases have been reported with bloody stools.

7. Jaundice, one of the cardinal signs of carcinoma of the head, is not found in primary cancers of the body and tail.

8. Gastric disturbances, such as anorexia, nausea, discomfort after eating, may occur, as in any other abdominal disease. Hydrochloric acid is either diminished or absent (such may be due to cancer in any part of the body).

9. Emaciation and cachexia progress rapidly, as a rule.

Clinical tests of the urine and stools for pancreatic efficiency are most important if the diagnosis is to be made with certainty.

That glycosuria is not often found in association with pancreatic disease is frequently stated. But if one examines the urine thrice daily, *i.e.,* in morning, afternoon, and night specimens, rather than in one twenty-four-hour specimen, the percentage of positive findings is materially increased. In a case which the author reports, one-fourth only of the examinations revealed sugar.

Oxaluria seems always to be associated with chronic pancreatitis.

The stools, as in pancreatic insufficiency, are bulky, and may be oily or greasy. Free fat is an exceptional symptom. More important than free fat is the quantitative estimation of the split fats; if there is pancreatic insufficiency, the latter are diminished.

Schmidt's nucleus test, of giving the patient a cube of meat tied up in gauze and later examining it for the digestion of the nuclei, is valuable, but it is an extremely difficult task to find the cube. Examining the stools for undigested muscle-fibers is easier and simpler. Maurice Packard (New York Medical Journal, April 13, 1912).

SPLANCHNIC STIMULATION ON MUSCULAR FATIGUE, EFFECT OF.

The authors describe experiments which they performed to elucidate this subject as follows: The right tibialis anticus muscle is stimulated through its isolated nerve with single induction shocks between 120 and 180 times per minute, until it is recording a uniform fatigue curve. Brief stimulation of the isolated left splanchnic nerve now results in a sharp rise and fall in the curve, followed by a slower rise and fall which may last from three to five minutes. The increase of muscular efficiency during the second rise may amount to 100 per cent. The early sharp rise is due to increased blood-pressure from constriction of the splanchnic vascular area; it fails to appear if the gastrointestinal tract is removed or the arteries are clamped. The slow rise is due to adrenal stimulation; it fails to appear when all adrenal vessels are ligated, and if the adrenal veins are clamped, it is delayed until the clamps are removed.

Increased epinephrin in the blood can conceivably increase the efficiency of skeletal muscle either directly or by increasing blood-pressure and thereby bettering the circulation. Injection of epinephrin (2 c.c. of 1:100,000) in the experiments of the authors increased the height of the curve for more than eighteen minutes after the blood-pressure returned to the original level.

Emotional increase of sugar and epinephrin in the blood, as already shown, accompanies fear and rage. These major excitements are likely to be attended in wild life by the necessity of running or fighting. Sugar would supply energy, and epinephrin would tend to obviate fatigue in the laboring muscles. The ability to continue during excitement prolonged efforts, ordinarily

exhausting, can thus in part be explained. W. B. Cannon and L. B. Nice (Boston Medical and Surgical Journal, April 11, 1912).

TAPEWORM, DIAGNOSIS OF.

There are sometimes sufficient grounds, the author points out, for believing a tapeworm present, even when no segments have been passed. Under these circumstances the administration of a purgative for diagnostic purposes is advised by some authors. But a purge by itself is apparently not always successful in bringing away proglottides, and in some cases smart purgatives are contraindicated, *e.g.*, in the presence of severe hemorrhoids.

The author calls attention to deep pétrissage of the abdomen as an aid to the diagnosis of tapeworm. He knows even of several cases in which the parasites' presence was unsuspected until this procedure had been carried out. In one of these cases the patient had taken all kinds of purgatives for the relief of constipation without passing any segments.

By deep abdominal pétrissage he refers to a series of circular movements executed in the direction of the large intestine with sufficient energy to cause a thorough kneading of the abdominal contents. It is essential that the abdominal parietes and the fingers of the operator move as one over the underlying viscera. It is not necessary, however, for the pétrissage to be executed very hard in order to achieve the desired end; no pain should be caused. The procedure presumably dislodges the proglottides in 2 ways—by promoting peristalsis, and by mechanically separating segments of the distal end of the parasite by tearing through their attachment. The latter action is probably of by far the greater importance. It does not seem possible actually to dislodge the scolex; the measure is therefore to be regarded purely as a means of diagnosis, which cannot replace the usual curative treatment.

The advantages claimed for the procedure are: 1. It is entirely harmless and reveals worms in some cases in which purgatives alone have apparently failed. 2. It does not interfere with the patient's regular work, and causes no discomfort worth mentioning. As a rule, only about 3 or 4 applications of deep pétrissage, each of fifteen minutes' duration, are required to establish a definite diagnosis. 3. It abolishes the unnecessary administration of purgatives, alone or in combination with anthelmintics, in cases where they are contraindicated. 4. It is apparently uniformly successful,—a conclusion reached after at least 30,000 deep pétrissage treatments had been carried out. R. J. Cyriax (New York Medical Journal, May 4, 1912).

ULCUS SERPENS, TREATMENT OF.

The author reports that he has found it possible to cure a much larger proportion of cases of pneumococcus ulceration of the cornea than formerly, by the use of large doses of pneumococcus serum. Seventy per cent. of all cases were thus caused promptly to recover, the average time of discharge of the patients being now on the ninth day. These favorable results suggest that in pneumonia larger amounts of serum than have heretofore been used should likewise be tried. H. Gebb (Deutsche medizinische Wochenschrift, December 7, 1911).

Clinical Summary

Practical hints from articles and abstracts that have appeared in the Monthly Cyclopedia and Medical Bulletin during the current year.

Acne. TREATMENT. Vaccines useful for selected cases: (1) Cases with deep-seated pustules, occupying a large area; micro-organisms abundant, staphylococcus greatly predominating. Autogenous staphylococcic vaccine most efficient, but must be administered over some months. (2) Cases with lesions indolent and superficial, chiefly inflamed comedones, with but little pustulation. Stock acne bacillus vaccine here gives good results in many instances. Administer 5 to 10 millions acne bacilli every week or ten days. (3) Cases combining the more and less severe lesions of the first and second groups. Use mixed vaccines of staphylococcus and acne bacillus. Other measures: Remove other etiological factors, such as reflex circulatory disturbance due to nervous strain in adolescence and digestive disorders. Correct constipation and regulate diet and mode of life. Locally, squeeze out comedones and wash often and vigorously with soap and water; if suppuration present, puncture or incise pustules, bathe with hot water, and dress antiseptically; disinfect skin and have garment worn next to affected part frequently changed; X-rays; radium for indurated nodules. *Morris and Dore.* Page 93

Acne Rosacea. TREATMENT. Where acne indurata associated, incise papules and pustules, scarify distended nasal capillaries, and apply Bier's cup for some time to individual lesions. Have patient apply hot compresses freely to face and at night following ointment: Salicylic acid, 0.6 (gr. x); precipitated sulphur, 4.0 (3j); white petrolatum, 30.0 (℥j). *Aronstam.* 176

Adenitis, Tuberculous. TREATMENT. Röntgen rays recommended for routine use in cases that do not readily respond to medical treatment. Give ten daily irradiations, then 2 or 3 times a week. Study of proper dosage in each case necessary. Patients thus treated early can be cured without breaking down of a single gland. Where such breaking down does occur, incise, swab out cavity with equal parts of iodine and phenol, and drain. *Boggs.* 229

Albuminuria, Orthostatic. DIAGNOSIS. Euglobin or nucleoproteid reaction of urine useful for differentiation of "harmless" orthostatic or adolescent albuminurias from that of organic renal disease. Test performed thus: Dilute 3 to 5 c.c. of urine with 4 to 5 times its volume of cold distilled water and add 2 to 3 c.c. of 50 per cent. acetic acid. Where test positive, a diffuse cloudiness appears, which becomes more intense on standing; this shows the albuminuria to be harmless. *Elliott.* 365

Anal Fissure. TREATMENT. Where merely a shallow, red, linear tear: (1) At first visit, cocainize fissure and dilate sphincters gently with fingers; lightly curette any unhealthy granulations present. (2) Regulate bowels by correcting diet, nightly injections of olive oil and, if necessary, cascara or compound licorice powder. (3) Anus to be bathed night and morning with warm water, and a sterile gauze dressing smeared with calomel or boric acid ointment—or, if pain very severe, cocaine or morphine (gr. v-x to ℥j)—applied. (4) At 4- or 5- day intervals, cocainize ulcer, stretch sphincters moderately, and apply ichthyol and glycerin, 15 per cent., or balsam of Peru, 20 per cent. in castor oil, upon cotton, to remain for several hours. Tuttle recommends application of pure ichthyol to fissure 2 or 3 times a week. In many cases not amenable to above palliative treatment excision is applicable: Infiltrate under and around fissure with 0.1 per cent. cocaine, seize small fold of skin at its lower angle, and excise ulcer with tissue forceps well up into anal canal. Where but moderate hypertrophy of sphincters, especially in children and the elderly, dilatation is the method of choice; some cases recur. Where marked sphincteric spasm, incision and division of external sphincter, under local anesthesia in majority of cases, always gives excellent results. *Hill.* 345

Anemia, Pernicious. TREATMENT. Case in a pregnant woman at term in which 4 intragluteal injections of defibrinated human blood, amounting altogether to 159 c.c., proved markedly beneficial. *Esch.* 44

Anorexia. TREATMENT. Fresh pineapple juice found useful to relieve anorexia in 150 cases, including patients with simple anemia and pulmonary tuberculosis and convalescents from malaria, nephritis, pneumonia, typhoid fever, hepatic colic, acute cholecystitis, etc. In chronic gastric diseases in general, especially alcoholic cases, considerable benefit likewise resulted. *Floersheim.* 233

Appendicitis, Chronic. DIAGNOSIS. Pain chiefly in right lower quadrant, if unassociated with attacks of epigastric pain and nausea, is seldom due to appendix; before diagnosing chronic appendicitis exclude every other possible condition.

TREATMENT. Appendectomy alone frequently does not cure. This is true especially of patients with chronic constipation; a long, dilated cecum, with other evidences of enteroptosis, is usually present. *Stanton.* 33

Arthritis, Gonorrheal. TREATMENT. Intra-articular injections of iodine tincture, 5 Gm. on the average, used in many cases of

various types, with considerable success. Increased swelling at first, then cessation of joint effusion, disappearance of pain, and return of motion. *Hildebrand.* Page 37

Arthritis, Rheumatoid. TREATMENT. 1. Liberal diet, including plenty of animal food. 2. Guaiacol carbonate in cachets; dose at first from 5 to 10 grains *t. i. d.*, to be increased by 1 to 2 grains each week up to 15 or 20 grains. If given long enough (at least twelve months) this will in many cases arrest disease, diminishing size of joints and permitting of increased movements; it relieves pain markedly. 3. Potassium iodide in 10-grain doses, combined with the guaiacol, increases benefit; its depressing effect to be counteracted by tonics. 4. Thyroid preparations are of value in early cases associated with Raynaud-like symptoms and cramps in extremities. 5. Hot baths, superheated air, or electric light; douche masssage; peat baths or brine baths. 6. Passive movements and massage. 7. Bier's hyperemia, where affected joints few. 8. Fibrolysin followed by massage, where joints more or less fixed owing to fibroid thickenings. 9. Irrigations of colon, where arthritis secondary to chronic colitis. *Luff.* 112

Thyroid preparations useful in many cases of long-standing osteoarthritis and chronic infectious arthritis, probably because of damage to the thyroid gland resulting from its hyperactivity attendant upon continued toxemia. Slow pulse an indication of thyroid failure; emaciation does not preclude it. Dosage of dried thyroid substance ranges from 1½ grains (0.1 Gm.) once daily up to 5 grains (0.3 Gm.) *t. i. d.* in distinct myxedema. Avoid causing headache, diarrhea, or reduction of blood-pressure, and intermit drug from time to time. Thyroid medication necessary for remainder of life where thyroid failure thoroughly established. *Midelton.* 236

Asthma, Bronchial. TREATMENT. Importance of chronic coprostasis and intestinal autointoxication in etiology of asthma shown. Necessity of bowel regulation in the treatment emphasized. *Ebstein.* 33

Epinephrin hydrochloride found most effective drug next to morphine in treatment of the asthmatic paroxysm in 31 cases. Ten to 15 drops of 1: 1000 solution injected under or into skin give immediate relief, which is often also lasting. Blood-pressure not increased by it, but rather lowered. Stramonium cigarettes or fumes give comfort in some patients, hypodermics of nitroglycerin in but a few. Atropine safer but less sure than morphine, which should be last resort. Treatment between paroxysms: Remove reflex causes such as deflected nasal septum, sensitive point near inferior turbinates, disordered stomach, and constipation. Overcome obesity where present. Give prolonged course of potassium iodide, 10 to 15 grains (0.65 to 1.0 Gm.) three times daily and thereafter alternate use of drug for 10-day periods with 10-day intermissions. *Lemann.* 94

Blepharitis. TREATMENT. Marginal blepharitis in children to be treated as follows: 1. Remove crusts 2 or 3 times daily with sodium bicarbonate solution (gr. x to ℥j) or, at first, with warm olive oil. 2. After careful washing rub into roots of lashes a stimulating mercurial ointment (gr. viij of ammoniated mercury or gr. iv of yellow oxide of mercury to ℥j of white petrolatum). 3. If much discharge, especially purulent, cutting of lashes will facilitate cleansing; in worst cases, epilate all lashes involved in pustules. 4. If lid much excoriated, paint 1 per cent. silver nitrate solution on surface daily. 5. Keep lids closed with wet carbolic dressing (1 to 80) for a few days in severe cases, removing it *t. i. d.* to cleanse lids; avoid entrance of solution into eye. 6. Keep child from reinfecting lids with fingers by use of lightly smoked, domed protecting spectacles, or in the very young by cardboard splints bandaged on flexor surface of elbows. 7. Prescribe correcting glasses if required, to remove cause of ocular hyperemia. *Lawson.* 103

Burns. TREATMENT. Dry open-air treatment of extensive burns recommended. After thorough cleansing with soap and water and gasoline (under anesthesia, if necessary), dust burn lightly with zinc stearate powder. Give morphine to relieve pain. Once daily remove all heavy crusts, wipe off exudate with dry sponges, and dust on thin coating of powder. Never allow exudate to accumulate under crust over twenty-four hours. Success of treatment lies in constant absolute exposure of the burn. *Jack.* 346

Cellulitis. TREATMENT. In cellulitis of hand: Apply Bier bandage and treat pain with hot dressings of saline solution. If pain not relieved, reapply bandage several times; if this still ineffective, make incision or incisions into the part, apply bandage again, continue hot dressings, and have hand placed in bath of hot saline thrice daily. Give iron and arsenic, prepare and inject a vaccine, and administer an antitoxic serum, particularly in early stages. Continue Bier's bandage after cellulitis has subsided and prescribe active movements and electric stimulation of muscles. X-rays often useful to cause deep hyperemia and promote removal of inflammatory products. Massage and passive movements after all inflammation gone. *Corner.* 346

Cholera. TREATMENT. Potassium permanganate given internally with some success. Dose, 0.4 to 0.5 Gm. (6 to 7½ grains) *per diem*, dissolved in 400 to 500 Gm. of pure water and given every half-hour. Drug continued two or three days in diminishing doses. Especially valuable in cases with hemorrhage. Iodine tincture given in 42 cases, with 34 recoveries. Dose, 40 to 60 minims daily, dissolved in 250 Gm. of distilled water, given

every hour. Copious bowel irrigations with warm iodine solution or 1: 1000 potassium permanganate solution also used with benefit in violent cases. *Logotheti.* Page 35

Clavicle, Fracture of. TREATMENT. Dressing of heavy moleskin plaster devised to avoid skin irritation of zinc oxide plaster and prevent looseness of dressing requiring reapplication. Warm a piece of moleskin 4 or 5 inches wide by 18 long, loop it about humerus high up in axilla, join its ends, and insert eyelets in them for lacing. Place a second strip around healthy side of body and adapt its posterior end for lacing with humeral loop, thus drawing shoulder of injured side back. Next place piece of moleskin 7 x 10 inches over healthy shoulder as a cap, and insert eyelets in free ends anteriorly and posterior. Pass a long strip 3 inches wide around forearm of injured side close to elbow, and connect ends in front of and behind body by laces with shoulder cap on healthy side, thus providing for elevation of injured shoulder. By tightening one lacing more than other, elbow may be brought forward or back as desired. Wait till adhesive well secured to skin before tightening laces. *Collins.* 347

Colitis, Mucous. TREATMENT. Apply to abdomen at night towel soaked in magnesium sulphate solution, ½ ounce to 1 pint of water, at 75° F. Irrigate rectum with 2 gallons of same solution at 85° to 90° F. Mucus disappears, and pain and gas formation diminish. Milk diet, with fruit, especially grapes, added, also effective; 1½ quarts of milk to be taken during day and 1 pint of hot milk at bedtime; continue for ten days to two weeks. Crude tar of *Pinus palustris*, mixed with flour and ordered in No. 2 gelatin capsules, gave good results; 2 or 3 capsules one hour after meals. *Joseph.* 42

Calumba-agar, containing solid constituents of 2 c.c. of fl. ext. calumbæ in 1 Gm. of agar, found useful in colitis with mucus in stools (*v.* Constipation). *Einhorn.* 231

In treating spastic constipation in these cases: (1) Where weakness of abdominal muscles, prescribe an elastic belt to support abdomen above pubes, especially in the obese; combine with this exercises. (2) Where feces too dry, salines, with or without agar-agar or regulin, give best results. (3) Where insomnia in early morning hours, a saline draught will often bring on sleep. (4) Where pain is present owing to slow passage of inspissated fecal material, give oxgall pills and oil enemata. (5) Cellulose in diet helps to prevent fecal accumulations, but discretion is required in its use; agar-agar should be used as a material to replace vegetable fiber. *Higgins.* 295

Constipation. TREATMENT. Hormonal, 20 c.c. injected intravenously or intramuscularly, found effective in constipation with general atony and in postoperative paresis. *Hoxie.* 170

Medicated agars considered useful. Phenolphthalein-agar, containing 0.03 Gm. of phenolphthalein in 1 Gm. of agar, and rhubarb-agar, containing 1 c.c. of fl. ext. rhei in 1 Gm. of agar, recommended. Prepared by dissolving remedy in boiling agar water solution, thoroughly mixing, evaporating to the original dry agar volume, and grinding up into flakes. Dose, 1 teaspoonful twice daily in water after meals. *Einhorn.* 231

Constipation with Diarrhea. Found in gouty patients, after abdominal and rectal operations, in pulmonary tuberculosis, in achylia gastrica, and in hypochlorhydria with gastrointestinal atony.

TREATMENT. A few (3 to 5) 2- to 5- grain doses of calomel, followed by magnesium sulphate, or sodium sulphate, or a laxative water; in other cases, castor oil in ½- to 1-dram doses 2 or 3 times daily, continued for a month. Ichthyol valuable in cases with much fermentation. Physical treatment with oil or oil-emulsion enemas, hot baths with massage, or hot wet packs changed every 15 to 30 minutes. Rest in bed. Gastric lavage. Well-prepared food. Strong, black coffee with plenty of sugar often useful; also good beer or cream; bread spread with butter and honey; stewed or dried fruit (latter soaked in water); cheese; agar-agar, etc. Modest exercise alternating with rest; salt baths, sitz baths; sensible wearing apparel; correctly fitted corset. *Bernheim.* 69

Coryza, Acute. Aromatic spirit of ammonia and sweet spirit of niter recommended as best agents to "abort" a cold. *Beverley Robinson.* 47

Mixed stock vaccine composed of various strains of pneumococcus, 40,000,000; streptococcus, 30,000,000, and staphylococcus, 150,000,000, recommended in colds. Marked improvement usually apparent twelve to twenty-four hours after first inoculation. Repeat dose on second day, then, in prolonged cases, at three- to six- day intervals. Severe complications following colds prevented by vaccine treatment. In cases where catarrhal condition persists between acute attacks, *M. catarrhalis*, 100,000,000, should be substituted for staphylococcus in the vaccine. In some cases, dose has to be doubled. Inoculations made at four- to seven- day intervals for several months. *Sherman.* 291

Diabetes Mellitus. TREATMENT. Sodium perborate, applied as a powder, usually twice daily, brought about rapid healing in 3 cases of diabetic gangrenous ulcers. *Herzfeld.* 167

Diarrhea. TREATMENT. Agar medicated with astringents found useful where intestinal mucosa inflamed or ulcerated. Gambir-agar, containing solid constituents of 2 c.c. of tr. gambir comp. in 1 Gm. of agar; tannin-agar, 0.03 Gm. of tannin in 1 Gm.; simaruba-agar, 1 c.c. of tincture to 1 Gm., and myrtle-agar, 1 c.c. of tincture to 1 Gm., recommended, the last especially in diabetic cases (*v.* Constipation). *Einhorn.* 231

Diarrhea, Infantile. TREATMENT. Soy flour useful in summer diarrhea and some forms of intestinal indigestion; given in form of dilute gruel with or without addition of barley flour and later condensed milk or cows' milk. One to 2 level tablespoonfuls of soy flour to the quart suffice at first; later increased to 4 spoonfuls. Soy-bean, barley, and condensed-milk mixtures useful where, cows' milk disagreeing, there is difficulty in finding food sufficiently nutritious for child. Orange juice advisable from time to time to prevent tendency to scurvy. *Ruhräh.* Page 52

Following combination recommended in the more severe forms of infantile diarrhea: Magnesii sulphatis, ʒj-ij (4.0-8.0 Gm.); mucilaginis acaciæ, fʒss (15 c.c.); phenylis salicylatis, gr. v-x (0.3-0.6 Gm.); glycerini, fʒiij (12 c.c.); aquæ chloroformi, q. s. ad fʒiij (90 c.c.). Give 1 teaspoonful every one, two or three hours, sleeping or waking, vomiting or not. Add glycerin when urine concentrated, or give a little sweet spirit of niter separately. Where the salol causes nausea and vomiting, omit it. Take character of stools as guide to frequency of administration: If blood in them does not diminish increase number of doses. Feed child with barley water and white of egg beaten up with an equal amount of water, or better, soda water. In serious cases peptonoids may be added though they sometimes disagree. Place pinch of pepsin scales on tongue after food. *Ellis.* 349

Diphtheria. TREATMENT. Case in which, after a cure with antitoxin, throat cultures showed abundant diphtheria bacilli three weeks after start of disease. Repeated applications to the throat of a dilute culture of *Staphylococcus pyogenes aureus*, made by inoculating 8 c.c. of bouillon with a loopful of a fresh agar growth of the coccus, led to disappearance of diphtheria organisms from throat, thus preventing the child from being a "diphtheria carrier." General condition markedly improved. No untoward effects. *Page.* 166

Eczema. TREATMENT. Alcohol useful as antiparasitic and to relieve itching. Apply 90 per cent. alcohol twice daily to and around lesions before carrying out other local measures. Good results even in rebellious cases. Applicable in all forms of eczema except those with abundant watery discharge. Continue long after affection overcome, to prevent recurrence. *Monatsh. f. pr. Dermat.* 96

Local treatment with heated air employed in 35 cases of eczema in infants, with good results. Applications made once daily for five to ten minutes; affected region then covered with olive oil. Strict dietetic measures also to be enforced. *Perlmann.* 167

Venesection followed by injection of salt solution gave good results in certain cases of chronic eczema with itching in which other treatment, including X-rays, had failed. (V. Pruritus, Treatment.) *Simon.* 365

Empyema. TREATMENT. Convenient method of drainage of empyema in young children described. After locating pus with aspirating needle, insert narrow-bladed knife under it and enlarge wound just above a rib enough to admit snugly a short drainage-tube of rather stiff rubber, which is held in place by a cuff of slightly larger tubing, a piece of tape slipped over it, and adhesive plaster fastening tape to skin. Connect rubber tube with glass tube passing through cork of a pint bottle and dipping in warm sterile salt solution contained in it. Raise bottle till solution runs slowly into pleural cavity, then lower, thus irrigating pleura. Change salt solution two or three times daily, or as often as necessary to keep it fairly clean. *Kenyon.* 36

Enterocolitis in Infants. TREATMENT. Pure cultures of *B. bulgaricus* used with marked benefit, all cases except the most advanced being cured. After preliminary dose or two of castor oil, liquid cultures given in doses of ½ or 1 teaspoonful every three or six hours, in a little water with milk-sugar. Diet for first one or two days: Whey from pure milk, diluted according to age; later, add milk in increasing amount, and for older babies barley or other cereal water. Milk used must be free of preservative, otherwise lactic bacilli inhibited. Where purity of milk not certainly known, give barley water with lime water and milk-sugar, and later add condensed milk. In breast-fed infants, milk usually continued and cultures given between feedings. *Harrington.* 351

Epididymitis, Gonorrheal. TREATMENT. Where preliminary pain at external abdominal ring (vasitis), put patient to bed and support scrotum by strip of adhesive stretched over anterior surfaces of thighs. For established epididymitis, support scrotum in same way, and apply to it following ointment: Mentholis, gr. xv (1 Gm.); ung. belladonnæ, gr. xx (1.3 Gm.); ung. Credé, gr. xxx (1.3 Gm.); ichthyolis, ʒj (4 Gm.); petrolati, q. s. ad ʒj (32 Gm.). If swelling of epididymis does not quickly resolve, strap testicle, as follows: Envelop affected half of scrotum in a square of gauze. Press testicle into bottom of scrotum with thumb and index finger and bind a strip of adhesive above organ, holding it down. Then pass other strips, starting at the first one, around under testicle and up the opposite side until organ is covered. Finally, secure with another transverse strip over the first. Support with suspensory. Renew strapping every other day. *Bethune.* 228

Epilepsy. TREATMENT. (1) Secure bowel movements once or twice daily. (2) Have patient drink water freely. (3) Tepid sponge bathing or brief immersion baths followed by gentle rubbing. (4) Mild exercise in open air. (5) Mixed diet, consisting of vegetables and milk in liberal amount, and also white meats; starchy foods in limited quantity; normal amount of fats. Correct digestive

difficulties. (6) Bromides to be used early in disease and in sufficient amount to control seizures. (7) Sodium chloride withdrawal found an aid to bromides, though prohibition of salt should not be so radical as to cause anorexia and loss of weight. (8) Combination of sodium glycerophosphate with bromides proves beneficial. (9) Thyroid extract valuable in epileptic children with arrest of development, as well as, occasionally, in other cases; to be given persistently, in small doses; after a time, it will be found bromides can be reduced or even for a while suspended. (10) Trial of pituitrin in epilepsy justifiable. (11) Symptoms preliminary to seizures, such as headache, depression, etc., indicate the prophylactic use of a saline purge, diminution of food, and increased bromide dosage. *Dercum.* Page 292

Operation justifiable: (*a*) In traumatic epilepsy with external evidence of injury; (*b*) *do.*, without evidence of injury when nature of attacks or symptoms immediately following injury indicates seat of lesion; (*c*) in Jacksonian epilepsy; (*d*) in general epilepsy where suggestion of a focal lesion may be found before or after attacks in some disturbance of motion, sensation, or reflexes. Gratifying results may be anticipated after operation in 10 to 25 per cent. of cases. *Frazier.* 293

Epistaxis. TREATMENT. Sodium perborate used with success to arrest hemorrhage in epistaxis and after adenoid operations or tonsillotomies. *Herzfeld.* 167

Erysipelas. TREATMENT. Solution of 20 drops of phenol in 25 Gm. (6 drams) of pure neutral glycerin recommended. It is painted over affected area and surrounding skin, but must not come in contact with mucous membranes. *Lodi.* 98

Solution of aluminum acetate recommended for local use in facial erysipelas (*v.* Furuncle). *Stansbury.* 227

Paint involved area in mild cases every hour with preparation of 15 minims (1 c.c.) of phenol and 1 ounce (30 c.c.) of turpentine oil. Treat severe, widespread cases with dressings soaked in mercury bichloride, or better, absolute alcohol, applied twice daily or oftener. Internally give 4 drams (15 c.c.) of camphor water three times daily, and by enema 15 grains (1 Gm.) of collargol twice daily. *Van Velzen.* 348

Esophageal Carcinoma. TREATMENT. Small amounts of hydrogen peroxide solution of 1 to 2 per cent. strength, sipped at intervals of an hour, facilitate descent of food, even in late cases where rectal feeding has been resorted to. *Liebermeister.* 98

Femur, Fracture of Neck of. TREATMENT. Apply extension apparatus. Control eversion of foot as follows: Thin a medium-sized pillow along one edge and slip this under limb, reaching nearly to heel. Pin securely to bandage supporting the extension straps, roll pillow firmly against limb, and pin at its other edge. Put firm roller bandage around pillow and limb. Pillow should be adjusted to raise heel a little, avoiding pressure on it. Finally, place smaller pillow under popliteal space and fasten to the larger pillow. *Totman.* 228

Furuncle. TREATMENT. Seen early, a superficial furuncle may be aborted by inserting pointed matchstick, dipped in phenol, deeply into its center; if lesion deep, inject several drops of liquefied phenol at base of lesion. For a furuncle seen late in first stage: Scratch off central vesicle and apply a Bier cup. Dress with sterile gauze wrung from normal saline solution with 1 per cent. sodium citrate, after inserting a bit of rubber dam in opening if there be tension. Protect surrounding skin from citrate with ointment, and over citrate gauze apply waxed paper or oiled silk, covered by compress and bandage. Cupping and dressing may be repeated every four hours until slough loose, when latter is removed with small forceps. Apply citrate only three days. Also give citrate internally, 15 grains (1 Gm.) *t. i. d.* after meals. Where bluish, flabby granulations: Strap edges of wound with adhesive strips, dry granulations, mop with iodine tr., and dust with Bier's powdered silver nitrate. Snip off exuberant granulations. To promote epithelial regeneration, use 8 per cent. scarlet red ointment or amidoazotoluol. Prevent autoinoculation by shaving skin around furuncle and disinfecting with 70 per cent. alcohol, tincture of iodine with benzine, diluted liquor formaldehydi, or aluminum acetate solution. Repeat local disinfection with benzine at each dressing. Where furuncle first seen in stage of softening, incise and drain; latter may be assisted with a Bier cup. For very large lesions or in furuncles of face, inject 3 per cent. novocaine under base, wait five minutes, and remove core from tumor with small curette. Where supposed boils become carbuncles, excise the whole area, controlling bleeding with cautery and compresses, and apply pure liquefied phenol. For recurring furunculosis: Bacterin therapy with killed staphylococci; initial dose, 100 million bacteria, increased by weekly doses up to 1 billion. Yeast also useful. *Skillern.* 99

Solution of aluminum acetate recommended for local use. Made with aluminum sulphate and acetic acid, of each, 300 Gm.; calcium carbonate, 130 Gm.; distilled water, 1000 c.c. For use, dilute with distilled water, 1 to 7 or 10, and apply to parts on several thicknesses of gauze, covered with rubber tissue or oiled silk, and a loose bandage. Addition of ¼ volume of alcohol or glycerin to solution avoids wrinkling and whitening effect on skin. *Stansbury.* 227

Venesection followed by injection of salt solution gave much benefit in furunculosis. (V. Pruritus, Treatment.) *Simon.* 365

Gastric Dilatation. DIAGNOSIS. Vomiting, abdominal pain, distention, constipation

(occasionally diarrhea), collapse, splashing sounds, and peristaltic movement over stomach, appearing suddenly in the course of pneumonia, should at once suggest acute gastric dilatation.

TREATMENT. 1. Introduce stomach tube and practise lavage as often as distention occurs, even in cases with collapse. 2. Turn patient on right side or face. 3. Interdict food and drink by mouth. 4. Strychnine and eserine hypodermically apparently useful in some cases. *Fussell.* Page 107

Gastric Neuroses. TREATMENT. Condition nearly always associated with gastric atony and vertical "fish-hook" stomach. 1. Relief from pain (due to hyperacidity) obtained by recumbent position on right side or knee-chest posture for several minutes at short intervals after meals. 2. Peristalsis assisted by massage or having patient clasp left knee and make strong intermittent pressure of thigh against abdomen while lying halfway between prone and lateral position. 3. Helpful suggestion. 4. Abundant nourishment in small quantities at short intervals. 5. Attention to any existing anemia. Rational non-surgical treatment effective in majority of cases. *Greene.* 174

Fresh pineapple juice found useful to relieve anorexia. *Floersheim.* 233

Gastric Ulcer. DIAGNOSIS. Rice, milk, potatoes, and prunes cause positive reaction in benzidine test for occult blood in stomach contents, and hence must be excluded from diet before test is made. *Floersheim.* 105

Watermelon pulp found to cause positive reaction in guaiac-turpentine test for occult blood in feces. *Newbold.* 106

Gonorrhea, Acute. TREATMENT. Method causing arrest of suppuration in three to five days described. Inject 5 to 15 c.c. (¼ to 4 drams) of 0.25 per cent. protargol solution into urethra every half-hour in daytime and every hour at night. To be retained two to ten minutes, during which time urethra is gently massaged from behind forward. Increase strength of solution gradually. Patient should ingest large amount of fluid, in order to be able to urinate before each injection. Continue injections, given as often as possible, two or three weeks after cessation of pus. Then alternate protargol with lead acetate and zinc sulphate, of each, 0.3 Gm. (2 grains) in 200 Gm. (4⅔ ounces) of water. *Kuhn.* 37

Gonorrheal Cervicitis and Endometritis. TREATMENT. I. Acute cases: 1. Confinement to bed. 2. Keep emunctories active. 3. Limit diet. 4. Cleanse vagina frequently with large amounts of hot saline solution or hot water containing boric acid or a weak iodine solution. Use irrigator with nozzle projecting a straight forcible stream, and pinch mucous membrane of introitus around nozzle, to flush cavity satisfactorily. Intrauterine measures and pelvic operation intervention contraindicated. II. Subacute cases: 1. Soften and dilate cervix with Goelet's uterine electrodes and galvanic current. 2. Flush uterine cavity with hot iodine solution, 1 dram (4 c.c.) of the tincture to a quart of water, or silver nitrate, 1: 5000. 3. As condition improves, substitute daily intrauterine injections of iodized phenol (equal parts of iodine tincture and phenol) or 1 per cent. silver nitrate. Use syringe with long pliable nozzle, with its tip wrapped with cotton; inject fluid into cotton and withdraw syringe. Insert iodine-glycerin tampon (1 dram to 4 ounces), which patient is to remove next morning. Remove cotton within uterus at next visit. III. Chronic cases: 1. Puncture, evacuate, and sterilize diseased Nabothian glands. 2. Touch opened glands and erosions about os with pure iodine tincture. 3. Intrauterine irrigations and injections as above, three times weekly. 4. Curettage of uterus, thoroughly scraping internal os and cervical canal, followed by swabbing with iodine tincture and appropriate after-treatment. *Dannreuther.* 100

Gout. TREATMENT. Radium emanations used in 400 cases of gout and chronic arthritis. Patient in closed radium room for 24 to 36 sittings of two hours each. Injections of soluble radium salts near involved joints given in addition; also superheated air, electric light, and brine baths. Absolute rest in bed an adjuvant. Out of 50 cases in which blood was examined before and after treatment, uric acid disappeared in 37 instances, synchronously with marked amelioration. Cases in children particularly benefited, but cases of senile tuberculous and syphilitic arthritis and cases of very long standing, with marked joint changes, not suited for radium treatment. Low purin diet should also be tried for a few weeks or months; if ineffective, replace it by simple mixed diet, with as much of green vegetables and fruit as possible. *Gudzent.* 95

Hay Fever. TREATMENT. Calcium creosote solution diluted with 8 to 10 parts of water recommended; throat and nasal fossæ to be sprayed every hour or two for two or three days. Potassium iodide, 5 grains *t. i. d.*, effective in hay asthma; arsenic may be added with advantage. *Kolipinski.* 77

Mixed staphylococcus, pneumococcus, and streptococcus vaccine given at three- to four-day intervals with pronounced benefit. Some cures after 3 or 4 inoculations (*v.* Coryza, Acute). *Sherman.* 291

Hematuria, Essential. TREATMENT. Permanent relief usually obtained by renal decapsulation or nephrotomy. Before this is employed, tuberculin should be tried as well as, usually, turpentine or other medicinal measures. *Babcock.* 257

Hemophilia. TREATMENT. Bleeding from wound in a hemophilic boy, previously uninfluenced by any remedial agent, checked by allowing blood from finger of a normal individual to drop on the wound. A clot formed immediately. *Sayer.* 168

Hemorrhoids. TREATMENT. Injection method used in 55 cases with satisfactory results. After suitable preparation, place patient on left side, with knees flexed. If tumor presents, apply compress soaked in 2 per cent. phenol to it and allow to remain two or three minutes; if not, use rectal speculum. Solution to be injected into pile consists of equal parts of phenol, glycerin, and sterile water, and of this 2 to 4 minims (0.12 to 0.25 c.c.) are used, according to size of growth. After injection tumor should be forced back above sphincter, and patient recline for next six hours and abstain from straining, etc. If prolapse should occur, pile should be returned at once and hot compresses frequently applied. Pain after operation may be relieved, if necessary, with a few 2½-grain (0.15 Gm.) tablets of Dover's powder, though it is rarely severe. Inflammation of pile occurred in 3 cases of series. After disappearance of tumor a small ulcer may remain, which will rapidly heal on applying silver nitrate solution (10 or 15 grains to the ounce) every two or three days. *Wilkinson.* Page 168

Hepatic Affections. TREATMENT. Combination of sodium salicylate and sodium benzoate found useful for cholagogue and "flushing-out" effects in various disorders, especially suppurative angiocholitis, cholecystitis, and lithiasis. Sodium salicylate induces flow of concentrated bile; sodium benzoate, of dilute bile. Relative amounts of two salts to be varied according to indications. Formula suggested: Sodium benzoate, 0.75 Gm. (12 grains); sodium salicylate, 0.5 Gm. (8 grains); sodium borate, 0.25 Gm. (4 grains); rhubarb, 0.3 Gm. (5 grains); to be taken *t. i. d. Polain-Cartier.* 38

Hernia, Inguinal. TREATMENT. In infants use truss; to be kept applied continuously. After two years, if hernia still persists, urge radical cure, if possible. *Campbell.* 169

Hip-joint, Congenital Dislocation of. TREATMENT. Manipulative method used in 33 cases. If used at earliest possible time after infancy, the method may be expected to yield stable articulation with perfect function in 60 to 70 per cent. of cases; in remainder condition is usually much improved. Attended by little or no danger in children below 8 years of age. *Simpson.* 38

Hodgkin's Disease. TREATMENT. Röntgen rays cause prompt reduction of glands. Whenever recurrence is manifest, renew the treatment. External tumors can thus be controlled a long time, or until patients succumb to deep involvement. *Boggs.* 229

Hyperchlorhydria. TREATMENT. Rhubarb and soda, or rhubarb and magnesia, either in mistura rhei et sodæ or in Gregory's powder, useful in gastric disorders with fermentation or hyperacidity. *Beverley Robinson.* 47

Hyperidrosis. TREATMENT. For sweating feet: Bathe them every night with 1 per cent. potassium permanganate solution and dry thoroughly. Next morning dust on following powder: Potass. permang., 3ij (8.0); alumin. pulv., gr. xx (1.25); talc. pulv., ℥j (32.0); zinci carbonat. et oxid., of each, ℥ss (16.0); or else, have patient wear white stockings previously soaked in saturated boric acid solution. Where bromidrosis, use dilute formalin. For sweating in axillæ: Bathe with weak vinegar, and apply following powder on gauze pad: Acid. salicyl., gr. xx (1.25); amyli pulv., 3ij (8.0); alumin. pulv., q. s. ad ℥iss (48.0); or else, use following lotion: Betanaphtholis, 3j (4.0); glycerini, 3ij (8.0); alcoholis, q. s. ad ℥iiss (80.0). Where persistent bromidrosis, short exposures to X-rays may be effective. *Meachen.* 177

Hyperthyroidism. DIAGNOSIS. Elevation of temperature found an early symptom in many cases, especially mild ones. When, in absence of acute or other tangible disease, there have been loss of weight and augmented nitrogen and phosphoric acid excretion, and when, after administration of a thyroid or iodine preparation, there occur the characteristic psychoneurotic and cardiac symptoms of excessive thyroid activity, elevation of temperature is a thyrotoxic phenomenon. *Stern.* 39

Hypothyroidism. DIAGNOSIS. Blood showing mild leucocytosis and relative lymphocytosis with eosinophilia from 3 per cent. up is highly suggestive of thyroid insufficiency. *Collins and Kaplan.* 40

Inertia, Uterine. TREATMENT. In secondary inertia and where pains ineffective owing to hydramnios or twin pregnancy, intramuscular injection of pituitary extract is indicated. May also be employed in febrile states. Where complications expected after birth, inject pituitary extract a few minutes before end of second stage. Where used in first stage, time to inject is when os is a little less than size of palm in primiparæ, and when it will just admit 2 fingers in multiparæ. *Jaeger.* 234

Intertrigo. TREATMENT. In infants acute enterocolitis, frequently the cause of intertrigo through the irritating discharges, should be overcome by dieting: stop milk; give rice, arrowroot, or albumin water, with plenty of pure water to allay thirst. Internally, give sodium phosphate, 5 to 10 grains (0.3 to 0.6 Gm.) every morning for two or three days, usually followed by castor oil, 1 dram (4.0 c.c.). Locally, soak parts with oatmeal water. Give an oatmeal bath, by soaking bag filled with oatmeal in tub filled with boiling water for one-half hour, then allowing to cool to 100° F. and giving child hip bath. Then use following salve: Calamin and zinc oxide, of each, 3 parts; petrolatum, 50 parts. Dust parts with cornstarch or wheat flour. Use salve three times daily, previously cleansing parts with olive oil, if necessary. *Fischer.* 170

Intestinal Indigestion. TREATMENT. Pure cultures of *B. bulgaricus* used with benefit in cases of indigestion of putrefactive type with odorous stools and indicanuria. Dosage, for adults, 3 to 4 teaspoonfuls of liquid culture 2 or 3 times daily, preferably in sweetened water before meals. Antiseptics internally to be avoided during treatment. Diet: Meat and eggs in limited amount only, or at first prohibited entirely; give buttermilk and milk containing no preservative; fruits and sweets freely; fats, cream, butter, bacon and gelatin; vegetables, if starch digestion good; bread and cereals. *Harrington.* Page 351

Intestinal Paresis, Postoperative. TREATMENT. Pituitary extract used in 21 laparotomy cases. Dose, 16 minims (1 c.c.), commenced six hours after operation and repeated every few hours until 18 doses given. All patients passed flatus freely within a few hours, and were free of pain and distention. In all cases but 2, bowel action was obtained after a simple enema. Three intramuscular injections of 1 c.c. each recommended during first twenty-four hours as routine practice in laparotomy cases. Pulse rate remains much lower than usual. *Bidwell.* 44

Jaundice, Catarrhal. TREATMENT. Cold injections of water or normal saline solution recommended, favoring biliary flow by promoting peristalsis. *Polain-Cartier.* 38

Laryngitis, Acute. TREATMENT. Freshly powdered cubeb, taken frequently and in moderate amount dry on tongue, found of service in acute throat disorders. *Beverley Robinson.* 47

Leg Ulcers. TREATMENT. Long-continued leg ulcerations are often accompanied by changes in underlying long bones, demonstrable by radiography. Periosteum finally involved. Potassium iodide is of value in these cases. *Coues.* 352

Lupus. TREATMENT. Pfannenstiel's method found useful in lupus of nasal mucous membranes. Give patient 45 grains (3 Gm.) of sodium iodide daily, divided into 6 doses. Every morning cleanse nasal cavity of crusts with nasal douche containing sodium chloride and boric acid, and, after drying, insert tampon of sterile gauze, in contact with affected parts. Have patient keep tampon constantly moist with 2 per cent. hydrogen peroxide solution. Free iodine is thus liberated from iodide excreted by nasal mucosa, exerting its effect on lesions. In early cases ulcerations heal in one to three weeks. *Sequeira.* 102

Malaria. DIAGNOSIS. Intensely black blood-pigment in the urine considered a pathognomonic sign of malaria. Centrifugalize urine in a clean tube for five minutes and examine drop from bottom under high power. Pigment appears in very fine granules, almost always grouped; somewhat larger granules; large polymorphous masses, and granules inclosed in hyaline plaques or leucocytes. *Urriola.* 232

Mastoiditis. DIAGNOSIS. A small mastoid process with thick outer cortex and small antrum is especially subject to "atypical" mastoiditis, condition escaping detection until serious complications appear. Suspicious symptoms in such cases are: 1. Discharge from ear more profuse than one would readily expect from middle ear alone and continuing profuse for two or three weeks. 2. Increased swelling of posterosuperior wall of external auditory canal. X-ray found useful for early diagnosis in a number of cases. *Crockett.* 41

Blurring of outline of tip of mastoid elicited by grasping both mastoids anteriorly and posteriorly between fingers and noting difference of definiteness of outline on the healthy and abnormal sides found valuable as corroborative evidence in early, doubtful cases of mastoiditis. Swelling from otitis externa may be confusing, but this is usually reduced in a few days by local treatment and ice-bag, while blurring of mastoid remains. *Alderton.* 104

Melæna Neonatorum. ETIOLOGY. Condition ascribed to oral infection; "mouth-cleansing" after birth considered inadvisable, giving chance for introduction of organisms. TREATMENT. Desperate case saved by injections of human blood-serum, doses of 20, 18, 10, 6, 18, 14, and 6 c.c. being given in four days. Method of securing serum was ordinary venesection (after careful skin cleansing), serum being allowed to separate spontaneously from clot in ¼-liter flasks. Injections made with antitoxin syringe anywhere from scapulæ to buttocks. *Nicholson.* 172

Movable Kidney. TREATMENT. New operation described in which strip of transversalis fascia is passed beneath an elevated portion of the kidney capsule and sutured to spinal attachment of fascia. Usual sutures through renal poles and quadratus lumborum also put in. *Bell.* 294

Myxedema. DIAGNOSIS. Where, in presence of puffy eyelids or dyspnea, physical examination does not yield evidence of renal or heart lesions, the existence of incipient or incomplete myxedema should be suspected. Therapeutic test—thyroid preparations in moderate dosage for a month—will confirm or disprove existence of hypothyroidism. *Butler.* 348

Nasal Accessory Sinuses, Inflammation of. TREATMENT. In acute cases: 1. Calomel followed by a saline, then by diaphoresis with hot lemonade. 2. Liquid diet. 3. Acetylsalicylic acid or hexamethylenamine, to reduce suppuration. 4. Atropine sometimes valuable, but to be used with care. 5. Locally, application with cotton swab of 2 per cent. cocaine solution, followed by epinephrin, then by 4 per cent. antipyrin. Spray of epinephrin in alkaline medium every two or three hours. 6. After thorough contraction of mucosæ, clear opening of sinus or sinuses with swab and irrigate nose gently with warm saline solution containing a little

sodium bicarbonate. 7. Oily spray of menthol and camphor. 8. Mild suction with exhaust bulb or Brawley apparatus. 9. Leucodescent lamp to relieve discomfort. 10. Hot applications. 11. Irrigation of sinuses (difficult, sometimes impossible without removal of bone). If condition unrelieved in a few days, operation. In subacute cases, same treatment + autovaccines. Latter also useful to hasten recovery in acute cases. *Miller.* Page 173

Nephritis. TREATMENT. Mild forms of nephritis probably often recover after renal decapsulation (doubtless some of these would recover under medical measures). In a case of acute interstitial nephritis with miliary abscess formation, patient recovered apparently because of decapsulation and scarification of cortex. Patients with high-grade parenchymatous change may be given a respite for six months to several years, but their symptoms will probably eventually recur; in such cases, a secondary decapsulation is to be considered. In parenchymatous nephritis with marked general edema, relief is generally so transient as to make operation of questionable value. *Babcock.* 257

Following diet useful in protecting patient with early chronic interstitial nephritis from ultimate failure of circulatory balance: Breakfast: Large helpings of bulky fruits; an egg and 2 thin slices of bacon; a slice of bread, or an equivalent of toast, muffin, waffles, cereal, etc.; tea, cocoa, coffee, milk, water, or carbonated water. Luncheon: Large helping of some vegetable salad, with pickles, olives, or other relish; a moderate amount of cheese; breads and liquids as at breakfast. Dinner: Vegetable, milk, or cream soup; piece of meat, fowl, fish, or game, about 2 x 2 x ½ inch in size; gravies in moderation; freely of all kinds of succulent vegetables, though moderately of potato, rice and other starchy foods; breads and liquids as at breakfast; a simple dessert. Total of food taken should be smallest which will maintain nutrition at highest level, as judged by body weight and sense of well-being. Where tendency to increase of weight, reduce amount of bread, potato and other starchy foods, and *vice versâ*. Upon rising and two and one-half or three hours after meals, a small glass of water or carbonated water should be taken. Moderate physical exercise desirable; if impossible, replace it by massage. Take body weight, measure all liquids taken and voided, and examine urine, weekly. Once in four weeks, give 2 freshly made 5-grain pills of mercurial mass every night for three days, followed the first time by ½ ounce of castor oil in morning, and the other two mornings by a saline. *Wells.* 354

Nervous Affections. DIAGNOSIS. External malleolar reflex (Chaddock's sign), indicating involvement of pyramidal tracts, found in 20 cases to be equal in value to the extensor plantar reflex (Babinski). It is more delicate, appears earlier, and often lasts longer than the Babinski. Consists of irritating outer side of foot below external malleolus with nail file; if positive there occurs dorsal extension of toes. *Ingram.* 95

Osteomalacia. TREATMENT. Daily doses of 3 to 5 dessertspoonfuls of a 0.01 per cent. solution of phosphorus in codliver oil, with rest in bed and baths as adjuvants, used with success in 6 cases of senile osteomalacia. *Reich.* 356

Otitis Media, Acute. TREATMENT. Relation of acute pharyngitis, nasal-sinus, middle-ear, and mastoid inflammations to an "active autotoxic state" of the system emphasized. Calomel in $\frac{1}{10}$-grain (0.006 Gm.) doses, frequently repeated up to 1 or 1½ grains, found valuable to stimulate defensive powers of body and shorten convalescence. Used in combination with local treatment. Calomel, followed by castor oil or salines, given every other day. *Snow.* 42

Pain, Local. TREATMENT. Combination of menthol and methyl salicylate in hydrated wool-fat, covered with cotton and gauze bandage, recommended to relieve local pain where skin is intact. *Beverley Robinson.* 47

Paralysis Agitans. DIAGNOSIS. New sign, present in the early period of rigidity, when diagnosis difficult, described. Consists of a "cog-wheel," intermittent resistance felt when examiner grasps wrist with one hand, steadies arm above elbow with the other, and makes rapid flexion and extension of arm. Never found present in other diseases. *Moyer.* 176

Paralysis, General. TREATMENT. Salvarsan administered intravenously in a case of paresis in maniacal stage, with marked improvement. *Holland.* 73

Two cases reported in which salvarsan was of distinct benefit. *Daland.* 298

Pellagra. TREATMENT. 1. In mild or apparently cured cases: Moderate amount of exercise and fresh air, avoiding direct sunlight; varied diet, with some fruit and green vegetables, but no corn or its products. 2. Arsenic in large doses early in disease, later only in small doses. In early stages, give soamin hypodermically, starting with 1 grain every other day and increasing up to 3 or more grains to the dose until 75 to 100 grains have been given, followed by two weeks' rest, then resumption if necessary. For internal use, Donovan's solution apparently best. 3. Massage and hydrotherapy; give daily salt baths at body temperature, rubbing coarsely powdered salt, just moistened, vigorously all over body, a handful at a time. 4. For skin lesions: Moist boric acid dressing or ointment of boric acid or zinc oxide ointment usually suffices at first. Where epithelial regeneration going on and surface moist, paint occasionally with weak picric acid solution. Where sloughing and suppuration, wash daily with hydrogen peroxide and dust aristol or bismuth formic iodide lightly upon sur-

face; autogenous vaccine may limit extension. Where desquamation, dryness and thickening, give daily salt rub and massage with lanolin or cocoa butter. 5. For gastro-intestinal symptoms: Give mixture of 20 drops of dilute HCl or nitrohydrochloric acid with 1 dram of essence of pepsin and 10 drops tincture of nux vomica after each meal. Where vomiting, use mixture of cerium oxalate, chloretone and bismuth subnitrate, and where excessive diarrhea, use 1 dram or more of bismuth with phenyl salicylate and albumin tannate. 6. Where marked inanition: Gradually increasing doses of thyroid extract for a few weeks. Eliminate intestinal parasites where present. *Leroy.* Page 356

Pharyngitis. TREATMENT. Where swollen lateral bands alone present, paint them with zinc chloride solution (gr. xv-f℥j) or touch with galvanocautery. "Nervous cough" is often kept up by swelling of the lateral bands; these should then be painted gently with deliquescent trichloracetic acid, followed by brushing with sodium carbonate. *Grant.* 363

Placenta Prævia. TREATMENT. Absolute quiet, rupture of membranes when required, and irrigation with hot water recommended. Water should be at 45° to 48° C. (113° to 118° F.), and at least 7 or 8 liters of it should be used. Repeat irrigation if necessary to check hemorrhage. Seventy cases thus treated without a death. Infection from tampon and mishaps in version or introduction of bag thereby avoided. When hemorrhage arrested, spontaneous expulsion of fetus to be patiently awaited. Instrumental dilatation contraindicated. *De Bovis.* 44

Plague, Bubonic. TREATMENT. Early crucial incision into the swollen glands employed in 62 cases, with 54 recoveries. Causes immediate improvement in patient's condition, temperature being lowered and headache alleviated. Wounds dressed with iodine lotion, 1 dram to the ounce of water. *Nesfield.* 45

Pleuritis. DIAGNOSIS. X-ray studies showed that location of fluid in chest in serofibrinous pleurisy depends upon the position assumed most constantly by patient during acute stage, and that exudates of this type are but slightly, if at all, mobile. These facts are of assistance in differentiation of serofibrinous from other varieties of effusion. *Engelbach and Carman.* 106

Pneumonia, Lobar. TREATMENT. Creosote inhalations and moderate bloodletting, especially with leeches, recommended. *Beverley Robinson.* 47

Stock pneumobacterins, in doses of 25 to 600 millions, used in 20 cases, with 15 per cent. mortality; 30 other similar cases, under usual methods of treatment, showed 40 per cent. mortality. In some of the cases, strikingly prompt benefit followed use of bacterins; in others results were less marked or *nil.* Results seemed more definite with the larger doses. Dosage can be adjusted according to clinical phenomena; where malaise, headache, chilliness, or definite rigors, with rise of temperature, follow an injection, it is unwise to increase dose. *Robertson and Illman.* 107

Intramuscular injections of quinine and urea hydrochloride used in 192 cases of lobar and lobular pneumonia; mortality 12 per cent. Initial dose, 15 to 25 grains (1 to 1.6 Gm.), repeated in three or four hours, and perhaps once or twice again in first twenty-four hours. Same plan on second day of treatment, and on third, if necessary. Smaller doses, 5 to 10 grains, then sometimes continued by mouth. Results: Temperature and pulse rate gradually fall, respiration more rapidly; termination by lysis in five to twelve days. Procedure in injecting: Paint skin with iodine tincture, fill syringe with 50 per cent. solution of the quinine salt in sterile water; inject deeply into a muscle, emptying syringe thoroughly; withdraw needle, and seal puncture with collodion; no local ill results. Additional treatment: The usual hygienic and drug measures; saline infusion; sodium bicarbonate or ammonium compounds in sufficient amount to keep urine alkaline; tincture of ferric chloride when quinine withdrawn. *Solis-Cohen.* 235

In cases with blood-pressure below 110 mm. Hg and other symptoms of vasomotor paresis present (pulse soft, cyanosis not prominent, extremities warm), epinephrin in 10-minim (0.6 c.c.) doses of 1: 1000 solution should be given intramuscularly, even before signs of pulmonary edema appear. If latter develops suddenly, give 15-minim (1 c.c.) doses every twenty minutes for 4 to 6 doses or until the symptoms are controlled; repeat series of injections later if required. In pulmonary edema accompanying dilatation of heart due to toxic degeneration of muscle or added to the myocarditis of old persons, however, epinephrin will accentuate the dilatation, and is contraindicated. These cases are differentiated by fact that blood-pressure is high,—125 to 170 mm.,—cyanosis is marked from the start, extremities are cold, first heart-sound loses muscular quality, and pulse is small, of high tension, and irregular in frequency and size; physical examination may reveal cardiac enlargement, with descent of apex. *Brown.* 297

Pneumoperitoneum. DIAGNOSIS. In presence of free gas in peritoneal cavity, there occurs a concentric diminution of area of hepatic dullness, *i.e.*, dullness disappears at same time from upper border of liver downward and from lower border of liver upward. In tympanites, on the other hand, liver dullness disappears from below upward only. This distinction found useful in early diagnosis of perforation in typhoid fever. *Berg.* 108

Pneumothorax. DIAGNOSIS. Positive coin test, displacement of heart, and, in right-sided cases, displacement of liver are the most

important diagnostic signs, occurring in about 90 per cent. of cases. Succussion splash and metallic tinkle occur in 30 or 40 per cent. *Cruice.* Page 46

Poisoning by Acids. TREATMENT. Case of sulphuric acid poisoning reported in which, when patient comatose, intravenous injection of 300 c.c. of a 5 per cent. solution of sodium carbonate caused immediate return of consciousness. Ultimate recovery. *Marchand.* 357

Poliomyelitis, Acute. ETIOLOGY. Poliomyelitis is propagated by dust. Nasopharynx is probably point of entry. *Neustaedter and Thro.* 46

DIAGNOSIS. Lumbar puncture shown to be valuable in distinguishing poliomyelitis of meningeal type from acute cerebrospinal meningitis. Negativity of cerebrospinal fluid in poliomyelitis diagnostic; in meningitis, fluid shows marked turbidity, coarse clot formation, great excess of albumin, copious deposit of polymorphonuclear cells, and meningococci. *Forbes.* 46

Importance of thoroughly cleaning out alimentary canal at earliest period of disease emphasized; copious enemata high up found useful. Retention of urine may also require treatment with warm baths, hot compresses to abdomen, or, ultimately, catheterization. *Bogardus.* 175

Postnasal Catarrh in Children. TREATMENT. If condition acute, paint throat several times daily with boroglyceride, or, in older children, spray with a ¼ grain to the ounce solution of tartrated antimony while patient inspires deeply. Later, add an equal amount of glycerite of tannin to the boroglyceride. Where painting throat resisted, instill into nostril several times daily, while child lies back with head on pillow, a solution of 5 to 10 grains of resorcin to the ounce of saline solution, 10 grains of boric acid to the ounce of water, or 15 grains of sodium bicarbonate to the ounce. As redness of pharynx fades, apply pure glycerite of tannin or a paint of 12 grains of iodine and 15 grains of potassium iodide to the ounce of glycerin, with 5 drops of oil of cinnamon or peppermint. After all redness gone, use an astringent iron paint of 1 dram of the stronger iron perchloride to an ounce of glycerin. For anorexia: an iron tonic; stay in country or at seaside. Keep child well protected from cold for some time after. *Eustace Smith.* 34

Pruritus. TREATMENT. Venesection to the extent of 100 or 200 c.c., followed by injection of 300 to 700 c.c. of 0.9 per cent. sterile salt solution through same cannula, found to relieve itching at once, with subsequent cure or marked improvement. Procedure repeated 3 to 6 or more times, at intervals of five or six days. No untoward effects. *Simon.* 365

Pruritus Ani. TREATMENT. Idiopathic pruritus ani believed to be caused by streptococcic infection of skin. In 8 cases treated with autogenous vaccines made from organisms on skin, results were excellent, itching disappearing or growing less after 4 or 5 injections. *Murray.* 359

Psoriasis. TREATMENT. Put patient in warm bath (98° F.), to which, if skin tender and irritated, chamomile and bran or washing soda are added. Rub skin slightly once or twice with green soap, wash off, and remove scales. Next wash with 1:1000 mercury bichloride, then tar skin well with: Olei rusci, olei fagi pinguis (fresh), of each, 20.0 (3v); alcoholis diluti, 10.0 (3iiss). Patient then remains in bath twenty to thirty minutes, after which tar is washed off and affected parts treated with: Acidi salicylici, 1.0 (gr. xvj); sulphuris præcipitati, 4.0 (3j); zinci oxidi, amyli tritici, of each 1.0 (gr. xvj); petrolati, 25.0 (3vj). Dust talcum powder thickly over parts. Two days later, apply a 10 per cent. ointment of pyrogallol in hydrated wool-fat, followed by talcum, and after two days more, a 25 per cent. ointment of chrysarobin. For psoriasis of face, use following formula: Unguenti hydrargyri ammoniati, pyrogallolis, of each, 1.0 (gr. xvj); unguenti zinci benzoatis, q. s. ad 25.0 (3vj). For psoriasis of scalp, wash with 1:1000 mercury bichloride. Internally, give phenol and arsenic trioxide in separate pills, to be continued for a longer time than local treatment. Hygiene: Plenty of fresh air and rest. Bland diet, avoiding meat and alcohol, at least for a time. *Bernheim.* 327

Psychoses. TREATMENT. Seven cases—4 in children—reported in which pronounced mental disturbances were shown due to dental impaction, alveolar abscess, or other conditions affecting teeth, and cure or great improvement resulted upon remedying these states. Importance of X-ray examination of teeth and jaws in psychoses emphasized. *Upson.* 129

Puerperal Sepsis. TREATMENT. Intravenous injections of mercury bichloride used in 11 cases, with 6 recoveries. Measure considered worthy of trial in severe cases. Twenty drops of a 1 per cent. solution injected once or twice daily; 1 to 4 grains of bichloride used during the treatment. Precautions necessary: 1. Teeth to be carefully cleansed. 2. Salines to be omitted during treatment. *Stowe.* 110

Outdoor treatment of severe puerperal infections found usually to bring about rapid improvement and to lower mortality by nearly 20 per cent. Sunlight as important as air. Patients kept out of doors on a wheel bed, to be moved in again when necessary. General condition strikingly well maintained in the prolonged pyrexias. Other measures: Iron, arsenic, strychnine, alcohol, fluids copiously by mouth, saline enteroclysis in severe cases, alcohol and cold sponge baths for pyrexia, hot or cold applications for abdominal pain and distention. Curettage contraindicated, increasing mortality 10 per

cent.; local treatment to be limited to a single intrauterine douche of sterile salt solution. *Young and Williams.* Page 236

Pyorrhœa Alveolaris. TREATMENT. Ionization recommended, as antiseptics do not reach bacteria lying deep in tissues. Drugs found efficacious in ion treatment: zinc chloride, 3 per cent.; cuprol, 2 per cent.; argyrol, 5 per cent.; iodine. Current strength, 0.5 to 2 or 3 milliampères. *Sturridge.* 359

Quinsy. TREATMENT. Early probing advocated, in order to drain pus accumulation at its inception. With aid of reflected light and tongue depressor, tonsillar fossæ, especially upper ones, are entered in turn by means of a tonsil slitter or probe. Where bottom appears soft, rounded point of instrument is pushed deeper into tissues, capsule pierced, and peritonsillar space entered. The small amount of pus thus evacuated gives a sense of relief and infection stops. This can be carried out in about 8 out of 10 cases. It is practically painless and bloodless. *Schuster.* 360

Raynaud's Disease. TREATMENT. Apply liquid ichthyol in 10 per cent. strength locally. Internally, large doses of potassium iodide are very beneficial. Rest in bed and hot applications of some antiseptic solution to the affected members are useful. Where gangrene, amputation may be all that is necessary, but healing is tedious. *Beck.* 298

Renal Traumatism. TREATMENT. After crushing injuries of renal substance spontaneous repair is usual. Operation should not be done unless there is evidence of intraperitoneal leakage, progressive hemorrhage, urinary extravasation, or sepsis. *Babcock.* 257

Rheumatism, Acute Articular. TREATMENT. *Streptococcus pyogenes* vaccine used in 6 cases, in 4 of which no salicylates were given, with good results. Temperature quickly fell in every case, pain ceased, and inflammatory phenomena disappeared. Stock vaccine from several strains of streptococcus used in these cases, but author thinks it preferable to employ a mixed streptococcus and staphylococcus (*aureus* and *albus*) vaccine. *Wolverton.* 48

Rheumatism, Chronic. TREATMENT. In rheumatic conditions associated with anemia and in sore throat of rheumatic origin, following mixture recommended: Dissolve 1 dram (4 Gm.) of sodium salicylate in 2 ounces (60 c.c.) of water. Add liquor ferri perchloridi, plus an ounce of water, giving dark purple mixture. Then add 1 dram of potassium bicarbonate dissolved in 1 ounce of water, and fill up bottle to 8 ounces with water. *Drinkwater.* 51

Lime-poor diet found useful in certain forms of subacute and chronic arthritis, especially deforming arthritis, cases with joint pains following acute polyarthritis, and cases of chronic spinal ankylosis. Cases should be selected by test-diet, to make sure of calcium retention, as other patients will not respond to the treatment. Articles of food allowed in lime-poor diet: White or aleuronat bread, rice, tapioca, wheat flakes, sago, tomatoes, mushrooms, white of egg, meat bouillon, beef, calves' liver, tongue, sweets, vegetable fats, light beer, carbonated waters, port. Distilled water to be used in preparation of food. After six or eight weeks restrictions may be somewhat relaxed. *Hirschberg.* 110

Rhus Poisoning. TREATMENT. Aluminum acetate solution recommended for local application (*v.* Furuncle). *Stansbury.* 227

Ringworm, Eczematoid. Fifteen cases studied. Three main types: (1) Acute vesiculobullous, bursting out suddenly like acute vesicular eczema; exudation into vesicles and bullæ commonly pinkish, owing to blood. (2) Chronic intertriginous of the toes; white masses of epithelium between toes with definite margin and slight vesiculation at dorsal edge of interphalangeal skin; intense itching. (3) Chronic hyperkeratotic of soles and palms, with overgrown horny layer and scattered small indolent pustules. DIAGNOSIS microscopic; demonstration of *Epidermophyton inguinale*, an ectothrix, or other organism. TREATMENT. Ointment of 5 per cent. benzoic and 3 per cent. salicylic acids in soft paraffin and cocoanut oil. For feet and hands can increase strength up to 1 dram benzoic and ½ dram salicylic acids to ounce. Where this fails, use 1 dram of chrysarobin in equal parts of chloroform, alcohol, and acetone to the ounce; apply on rising, pulling socks over it as soon as dry; wash off at bedtime. *Whitfield.* 96

Ringworm of Scalp. TREATMENT. Ionic method of introducing antiseptics into tissues advised in preference to X-rays, which occasionally lead to permanent alopecia. Drugs used: mercuric chloride, 1 per cent., or aqueous iodine solution, 1 per cent. Lint soaked in solution is applied evenly to surface and secured by a bandage. Copper gauze used as electrode. Other pole of electric supply is attached to water bath in which child's arm or foot is immersed. Increase current slowly to 15 or 20 milliampères and continue for forty-five minutes. Sittings 2 or 3 times weekly; average total number, 13. Continuous series of 53 cases cured. Have head washed daily with sulphur, betanaphthol and green soap mixture. *Riddell.* 360

Sciatica. TREATMENT. Where acute attack, in spite of the usual measures, persists longer than ten to fourteen days, sulphur baths or hot carbon dioxide baths (102.7° to 104° F., and lasting twenty minutes) should be employed, or heat applied in other ways. If ineffective, author counsels treatment by injections of saline solution and air: 1. Injection of 800 to 1000 c.c. of air, filtered through cotton, under skin on outer aspect of leg. 2. Injection of 60 to 80 c.c. of 0.8 per cent. salt solution, with 0.01 to 0.02 Gm. of novocaine

added, just below sacrosciatic notch, as close to nerve as possible. 3. Injection of 10 to 20 c.c. of salt solution, with 0.01 Gm. of novocaine into epidural space of inferior lumbar region, needle being passed in and up through coccygeal notch; preliminary anesthesia of course of injection with novocaine. 4. Where very severe pain and contractures of lumbar muscles, injection of 10 to 15 c.c. of salt solution between third and fourth lumbar vertebræ into epidural space. Injections to be repeated at intervals of three or four days, substituting 1 to 1.2 per cent. for 0.8 per cent. saline. Two to five series of injections cure obstinate cases. *Sicard.* Page 114

Semilunar Cartilage of Knee, Dislocation of. TREATMENT. Mold piece of sole leather 4 inches long and 1¾ inches wide to inner side of knee, first soaking it in water and cutting edges smooth. Fasten over the displaced cartilage by adhesive straps—2 vertical, 1 horizontal, and 1 oblique—and cover with fairly firm bandage. Patient may walk as usual, notwithstanding soreness. Bandage renewed every ten days. After 3 such treatments condition is well, an aseptic adhesive inflammation having taken place, and only a bandage need be used. *Chandler.* 171

Sinuses. TREATMENT. Following paste used with success in treating a discharging sinus in a breast cancer, after Beck's paste had failed: Bismuth subnitrate, 30 Gm. (1 ounce); petrolatum, 60 Gm. (2 ounces); white wax and paraffin, of each, 5 Gm. (80 grains), and iodine tincture, 2 Gm. (30 minims). The tincture is added after other ingredients mixed. Paste to be stirred when used. Where large amount to be employed, diminish proportion of iodine. *Green.* 177

Skull Depressions at Birth. TREATMENT. Persistent firm pressure with fingers of both hands upon bone surrounding depressed area found effective, causing depressed bone to snap back to normal position. *Hoffmann.* 102

Small-pox. TREATMENT. Mixture of 10 per cent. iodine and 90 per cent. glycerin painted over pustules 2 or 3 times daily in 85 cases; caused drying of lesions and arrest of tissue destruction, and prevented pock-marks. Pustules on face may be opened with sterile instrument and touched with iodine tincture. Desquamation frequently almost completed in four to six days. All cases recovered. *Rockhill.* 115

Splanchnoptosis. TREATMENT. Simple method of supporting viscera described: Shave hair from lower abdomen; place strip of zinc oxide adhesive plaster 2 to 2½ inches wide by 5 to 6 inches long across extreme lower abdomen; attach to each end of it a bandage of same width to reach around body above iliac crest and be fastened behind; have bandage well padded with cotton. Avoid skin irritation by plaster by removing it occasionally, cleansing skin, and using a dusting powder. Improve general and local muscular tone by means of massage, electricity, treatment of gastrointestinal tract, correct living, and suitable diet. *McCaskey.* 238

Sterility. TREATMENT. Case of sterility, with azoöspermia, due to bilateral gonorrheal epididymitis eleven years before, in which bilateral epididymodeferential anastomosis proved curative, spermatozoa reappearing about a year after the operation. *Delbet.* 98

Syphilis. TREATMENT. Salvarsan given intravenously in 10 pregnant women in doses of 0.5 Gm. and subcutaneously in 8 newborn infants in doses of 0.03 Gm. Injections in women in dose mentioned found to be not without danger to fetus, pronounced weakening in heart-sounds being noted in days succeeding injection in one-half the cases. Child of a mother given first injection of salvarsan five and one-half months before parturition was born healthy; a child born seventy-two days after salvarsan injection was syphilitic. In the newborn, salvarsan was found to act promptly on pemphigus and to cause disappearance of spirochetæ from lesions; it is capable of producing prompt and lasting recovery from hydrocephalus of syphilitic origin. Smaller doses now advocated by author: 0.2 Gm. for pregnant women, repeated in six days; 0.01 for newborn infants, repeated twice or thrice at six-day intervals. *Bar.* 49

Emulsion of salvarsan in lanolin oil found a satisfactory mode of administration in 30 cases. *Burke.* 50

Case of advanced cardiovascular syphilis, in association with greatly enlarged liver and glycosuria, under treatment for nine months, in which, while Wassermann reaction was but slightly influenced, glycosuria disappeared permanently, even though sugars and starches were given freely; liver returned almost to normal size and circulation was greatly improved. *Daland.* 298

Sodium cacodylate used in 43 cases, each patient receiving 14 to 16 injections on successive days. Fresh solution of the drug, 1 in 15 of distilled water prepared daily. Injections at first subcutaneous, then intramuscular. Dosage: 3 grains daily, increased as results noted up to 5 or 6 grains. No untoward effects except, rarely, slight muscular pains or spasm. Conclusion reached: Drug useful in syphilis, giving results not unlike those of salvarsan, though less rapid. Best effects in early syphilis, on initial lesion, maculoroseolar or papular eruption, mucous patches and condylomata; also has an excellent alterative effect. Place patient on mercury immediately after course of cacodylate injections ended. *Spicak.* 362

Tabes Dorsalis. TREATMENT. Salvarsan administered intravenously in 4 cases, along with hydrotherapeutic measures, with striking improvement. *Holland.* 73

Two cases reported, under treatment for over a year, in which lancinating pains were controlled, muscular inco-ordination improved, and Wassermann reaction became negative. *Daland.* Page 298

Tachycardia, Paroxysmal. TREATMENT. Attack of tachycardia in a woman relieved as follows: Patient being seated, physician's right hand was placed flat over heart, left hand on back, and patient directed to take deep breath, close glottis, and fix strongly walls of chest. Chest walls were then squeezed with some force, attempting to exert pressure on upper part of heart. Immediate relief and fall of pulse rate from 220 to 110. *Rich.* 233

Tetanus. TREATMENT. Phenol injections used in 5 consecutive cases, all recovering; 2 other cases treated with antitoxin died. Ten minims of 10 per cent. solution of pure phenol in sterile water, diluted to 30 or 40 minims, injected deep into muscles, at first every three hours, later at longer intervals as improvement appeared. Injections made into buttocks, deltoids, or pectorals. No untoward results. Urine, however, should be watched for smoky color, as a precaution. Severity of convulsions always diminished by the treatment, sometimes after third or fourth dose. In fully developed cases, second dose to be given one hour after first. Original wound to be excised or cauterized, as usual, with strong solutions of phenol, silver nitrate, or nitric acid. *Kintzing.* 115

Tetany. TREATMENT. Removal of whey from food given to infants with tetany found advantageous. Suspension of curds of wheyless milk proved useful as food. Best prepared as follows: Bring milk to a boil, then cool to 107° F. Add chymogen, 1 dram to the quart, and keep at 107° for half an hour. Strain through cheesecloth and allow to drain an hour. Finally, put curds through fine-meshed sieve, and suspend in a solution of arrowroot flour (1 level tablespoonful to the quart). *Grulee.* 230

Tonsillitis, Acute. TREATMENT. Tincture of iodine applied locally in 400 cases in children, with unusually prompt cures. Also used in pharyngitis, otitis media, tonsillar and nasal diphtheria, laryngitis, stomatitis, etc. For a milder application deep down in throat or in nose, equal parts glycerin and iodine tincture is satisfactory. In acute contagious diseases applications of iodine tincture to throat are of prophylactic value, combating spread of infection. *Sill.* 171

Brushing with 10 per cent. menthol and 3 or 4 per cent. guaiacol in olive oil often has good effect. *Grant.* 363

Trachoma. TREATMENT. Subconjunctival injections of diphtheria antitoxin used in 50 patients, 30 being practically cured and 20 greatly improved. After turning lids, eyes first washed with boric acid and saline solutions, then 1 c.c. fresh antitoxin injected in each lid from within outward. Lids then returned to normal position and another cubic centimeter injected under skin and muscle of upper lid. Inflammatory reaction for thirty-six hours, then disappearance of granules. Three or four such treatments given successively. *Pachopos.* 178

Tuberculosis. TREATMENT. Tuberculin applied locally in 10 cases, comprising suppurative cervical adenitis, anal fistula, and sinuses, with early cures in previously rebellious cases. Parts first irrigated with salt solution, then tuberculin solution sprayed on, or, in sinuses, introduced with syringe and flexible cannula. Mouth of sinus sealed with collodion for several hours. Initial dose must be small; later dose is carefully increased, avoiding general reaction. Locally there is pronounced reaction at first, then stimulation of processes of repair. *Beasley.* 56

Tuberculosis, Laryngeal. TREATMENT. Yeo's continuous respirator will check cough in this condition. Preparation generally used: Creosote, ʒiij (12.0); spirit of chloroform, oil of Pinus sylvestris, of each, ʒiss (6.0); oil of cinnamon, oil of citronella, of each, ♏v (0.3); menthol, gr. v-x (0.3-0.6). *Grant.* 363

Tuberculosis, Pulmonary. DIAGNOSIS. Hemoptysis occurring without warning in young adults, and unassociated with further signs or symptoms of tuberculosis, is probably of tuberculous origin and should be so treated. Hemoptysis in pneumonia, bronchitis, asthma, or following trauma should lead to suspicion of an underlying tuberculous process. *Bartlett.* 101

TREATMENT. Citrate of iron hypodermically found very efficient in relieving the secondary anemia in 257 cases, 70 per cent. of which were advanced or far advanced cases. Employed routinely where reduction in hemoglobin greater than 10 per cent. Dose, 0.05 Gm. (⅚ grain), injected in buttock. Italian preparations found least irritating. Maximum benefit attained after 30 to 40 consecutive daily doses. *Bullock and Peters.* 32

Comparative study of 146 cases receiving tuberculin and 234 treated by hygienic-dietetic method alone. Conclusion reached that tuberculin is valuable in tuberculosis, especially in moderately advanced cases, and is of special value as a protection against relapse. Autogenous vaccines used in 75 other cases; temperature rapidly returned to normal, expectoration diminished, and hemorrhage was rare. *Petit.* 57

Creosote carbonate, 10 grains in capsules every three or four hours, used with satisfaction in cases of tuberculosis with sudden symptoms of pneumococcic infection (shown by malaise, moderate rise of temperature, followed by bloody sputum and preponderance of pneumococci in saliva). *F. N. Robinson.* 152

Treatment of cough discussed. Facilitate early morning cough with glass of hot water or milk with or without 1 dram of whiskey

or brandy, 5 or 10 grains of sodium bicarbonate, or a little Saratoga Vichy. For irritative cough, avoid sources of irritation, such as rapid talking, laughing, smoke, etc.; control the desire to cough. Deep-breathing exercises, change of position in bed, sucking ice, sipping orange juice, demulcent lozenges. Where pharyngeal irritation, use slightly astringent lozenges: Ext. grameriæ, potassii chloratis, ana gr. xv (1); olei menth. pip., ♏ j-ij (0.06-0.12); ext. glycyrrhizæ puri, 3iiss (10); ft. in trochiscos no. xxx. Steam inhalations, with 3j-ij of cpd. tr. of benzoin or oil of pine to a pitcher of hot water. Where bronchial secretions abundant: Inhalation from perforated zinc mask (Robinson's inhaler) of 10 drops of equal parts of alcohol, creosote, and chloroform. For pharyngeal irritation, also try sprays of 1 per cent. menthol or pine oil in benzoinol or albolene, or a mixture of equal parts of menthol, camphor, and eucalyptol in 100 parts of benzoinol. For night cough: Warm drink before retiring; warming the bed; cross binder, above and below shoulders and across chest and back, previously dipped in cold water (60° F.) and covered with similar dry cross binder and a flannel jacket; renew in three hours or leave on all night. Strapping chest, where pleurisy. Sometimes counterirritation with iodine tincture or blisters over the apices or other site of irritation. For nervous cough: Bromides in 10- to 20- grain doses, chloral hydrate in 5-grain doses, or a combination of the two. Where wheezing and much secretion: Belladonna tincture, 10 to 20 minims, or atropine sulphate, gr. $\frac{1}{100}$ to $\frac{1}{50}$. Codeine, gr. $\frac{1}{12}$ at first, then $\frac{1}{8}$ or $\frac{1}{4}$ every two hours; heroine, in smaller doses; finally morphine, $\frac{1}{24}$ grain, increased if necessary. For abundant expectoration: Respiratory exercises, change in position, cross binder, and especially creosote inhalation and atropine. *Meara.* Page 239

Typhoid Fever. DIAGNOSIS. Russo's test found a valuable diagnostic aid in early cases. To 4 or 5 c.c. of patient's urine add 4 drops of 0.1 per cent. aqueous solution of methylene blue. After thorough admixture examine against light; a mint- or emerald-green color is positive, whereas any bluish tint renders test negative. Urines containing bile also give the test; therefore, this must first be excluded. *Rolph and Nelson.* 58

Early recognition of perforation facilitated by observation of concentric diminution of liver dullness. (See Pneumoperitoneum.) *Berg.* 108

Careful, repeated leucocyte counts claimed to afford earliest reliable means of typhoid diagnosis for general practitioner. Characteristic leucocytic picture: 1. Leucopenia, progressive, very likely preceded by slight leucocytosis. 2. Initial moderate polynucleosis, lasting first four to eight days. 3. Progressive, marked lymphocytosis, displacing polynucleosis and lasting well into recovery. 4. Increase in large mononuclears, beginning with onset of disease. 5. Sudden, early, and complete disappearance of eosinophiles. *Hultgen.* 116

New test for typhoid fever described: With fine hypodermic needle inject a few drops of suspension of dead typhoid bacilli, made by taking 1 drop of 1000 million vaccine and mixing it thoroughly with 20 drops of sterile saline solution. Inject intradermally and as superficially as possible. Typhoid patient shows absolutely no reaction, while non-typhoid patient shows an area of well-marked redness disappearing forty-eight hours after injection. *Prendergast.* 300

TREATMENT. Ipecac used in 6 cases with good results. In every case but 1 patient became afebrile within four days. Dose in the earlier cases, 30 grains (2 Gm.) on first evening, diminished daily by 5 grains down to 10 grains (0.65 Gm.); in other cases, 10 grains morning and evening, later decreased to 10 grains once daily; drug was given in salol-coated pills, preceded by tincture of opium to prevent vomiting. *Frazier.* 103

Lumbar puncture twice performed in a case with intense, persistent headache, second puncture bringing relief. *Oddo and Monges.* 178

Uncinariasis. TREATMENT. Beta-naphthol in 3 doses of 30 grains each at intervals of two hours, followed, again in two hours, by 6 drams of magnesium sulphate, found to expel 97.52 per cent. of total number of hookworms present. Thymol, in same dose, expelled 97.87 per cent., but caused serious constitutional disturbance. A 60-grain beta-naphthol treatment expelled 86 per cent. It was given as follows: Beta-naphthol, 4 drams (16); mucilage of tragacanth, 1 ounce (32); peppermint water, to make 6 ounces (192). *Nicol.* 230

Uremia. DIAGNOSIS. Depression of reflexes and positive Babinski phenomenon found valuable as a very early indication of oncoming uremia. Present in the stage of "preuremia." *Curschmann.* 48

Urethritis. DIAGNOSIS. Improved method of differentiating anterior from posterior urethritis described. Slowly inject 1 c.c. of 0.5 per cent. aqueous solution of basic fuchsin into anterior urethra and have it retained one-half to one minute, with slight massage. Allow fluid to escape and have patient urinate in 2 high glasses. If only stained shreds are present, there is no posterior urethritis; if only white, unstained shreds, infection is in posterior urethra; if both stained and unstained, process is both anterior and posterior. *Wolff.* 118

Urticaria. TREATMENT. Venesection followed by injection of salt solution proved useful in some cases. (V. Pruritus, Treatment.) *Simon.* 365

Vaccination Site. TREATMENT. Picric acid applied to vaccinal lesion in 22 children, to harden tissues and prevent local infection. Four per cent. solution in 95 per cent. alcohol

painted over and around vaccinal site forty-eight hours after vaccination and daily thereafter. Inflammatory reaction and constitutional disturbance lessened. No interference with success of vaccination. *Schamberg and Kolmer.* Page 118

Valvular Disease, Cardiac. DIAGNOSIS. To determine whether a murmur is systolic or diastolic when rate is rapid or murmur unusual, make intermittent pressure on radial artery to correspond in time with the murmur; if the finger, pressing synchronously with the murmur, feels the radial pulsations, murmur is systolic; if not, diastolic. *Long.* 167

Varicose Ulcers. TREATMENT. Stimulate granulations with silver nitrate (30 grains to the ounce), cover ulcer with sterile gauze, and apply long adhesive straps to skin on either side of lesion till skin well wrinkled. Have foot elevated on pillows till it returns to normal size. Change adhesive straps upon alternate days or oftener. Massage and attention to bowels. Linen elastic stockings, put on over white stockings to absorb perspiration, after ulcer cured. *Gills.* 178

Following method found effective in healing ulcers resistant to other forms of treatment: Place patient under deep anesthesia; remove all crusts surrounding ulcer; pour on tincture of green soap and sterile water, and scrub the ulcer with an ordinary stiff brush, previously thoroughly sterilized. Continue scrubbing, washing off *débris* with clean water, until base of ulcer is smooth and edges stand out clearly, red and hard. Paint ulcer and immediate vicinity with tincture of iodine, and apply wet boric or bichloride dressing. Pain generally complained of after recovery from anesthetic, but if bandage is kept moist with warm solution it soon ceases. Granulation soon sets in at many places, and repair is rapid and satisfactory. *Beck.* 300

Vertigo. TREATMENT. In cases of vertigo in patients with chronic nephritis or cardiac disease, arteriosclerosis or intestinal toxemia, both the general disease and aural lesions must be considered in treatment. Pilocarpine internally in small doses, gradually increased, often gives relief in inflammation of labyrinth. Where there is aural suppuration vertigo is a grave symptom, which may demand immediate surgical interference. *Dench.* 301

Vincent's Angina. DIAGNOSIS. Signs distinguishing it from lacunar tonsillitis are: 1. Absence of fever. 2. Pain more localized on affected side, and is severe, lancinating. 3. General malaise and physical exhaustion very marked.

TREATMENT. First perform gentle curettage of the tonsillar crypt involved. Then apply 12 per cent. silver nitrate solution. *Wherry.* 58

Salvarsan used locally, first in solution, then in powder, in a severe and obstinate case; prompt recovery. *Achard and Flandin.* 118

Vomiting of Pregnancy. TREATMENT. 1. Magnesium carbonate, 2 drams; magnesium sulphate, 1 ounce; mint water (1:40), 1 ounce; water, to make 8 ounces; wineglassful to be taken early in the morning. Cascara given daily in small doses for two or three weeks. 2. Simple diet; evening meal to consist only of thin porridge, gruel, or arrowroot. Koumiss; champagne, ½ hour before a meal. 3. Where relief from nausea only obtained after complete evacuation, encourage latter by the sipping of warm water. 4. Absolute recumbency in severe cases. 5. Drugs: Effervescing mixtures, salicin emulsion, phenyl salicylate, compound tincture of cardomom in dram doses, antipyrin or acetanilide with sodium bromide, small chloral and potassium bromide enemata, wine of ipecac in hourly minim doses; validol found most effective drug; menthol, 1 part in 60 of water, with 30 parts of alcohol or brandy, or chloroform (3 to 6 drops on sugar or in water) sometimes useful. 6. Rectal feeding, gastric lavage, laudanum stupes on epigastrium, ether spray, blistering of cervical spine, and ice-bags exert partly psychical effect. 7. Mental therapeutics, in purely neurotic type of vomiting. 8. Massage, electricity, blisters, etc., may help. *Hall.* 119

Whooping-cough. DIAGNOSIS. Edema of the eyelids, especially the lower lids, sometimes appears before the cough and may be of assistance in the diagnosis. *Thursfield.* 97

Wounds. TREATMENT. Nuclein solution found useful to ward off infection in cases of crushed and lacerated hands, burns, varicose ulcers, minor cuts, etc. *Achard and Redfield.* 105

Sodium perborate found useful as a dressing in infected wounds and acute or chronic ulcers. *Herzfeld.* 167

Solution of aluminum acetate recommended for dressing of infected wounds. Made with aluminum sulphate and acetic acid, of each, 300 Gm.; calcium carbonate, 130 Gm.; distilled water, 1000 c.c. For use, dilute with distilled water, 1 to 7 or 10. *Stansbury.* 227

ANNOUNCEMENT.

MEDICAL CLUB OF HARRISBURG.—At the annual meeting of the Medical Club of Harrisburg, Harrisburg, Pennsylvania, Dr. Samuel Z. Shope was elected President, Dr. J. Harvey Miller, Secretary, and Dr. John A. Sherger, Treasurer of the Club for the ensuing year.

Book Reviews

CESARE LOMBROSO. A Modern Man of Science. By Hans Kurella, M.D., Author of "Natural History of the Criminal," etc. Translated from the German by M. Eden Paul, M.D. Pp. 194. New York: Rebman Company, 1911. Cloth, $1.50.

In this little book are summarized many subjects of much anthropological and sociological importance. Not only are the chief events in and influences upon Lombroso's life described, but the birth and growth of the science now known as "criminal anthropology" is gone into in considerable detail, and the diverse subjects of criminal psychology, social reform, criminal jurisprudence, pellagra, agrarian reform, the nature of genius, and spiritualism referred to in the light of Lombroso's labors and conclusions. The whole work is plainly that of an admirer and supporter of Lombroso, who, while he does not fail to mention the views of Lombroso's opponents, marshals against them all the evidence at command.

The book does not aim to describe in detail the marked changes produced by the work of the great Italian scientist in the attitude toward and management of criminals in his own and other countries, but deals in a general way with the paths followed and fields covered by his various investigations. Of special significance is Kurella's careful explanation concerning Lombroso's doctrine of the "criminal type" of individual, which has been continually misunderstood. The type is not to be considered a definite one; it is rather an aggregate of individuals showing variations from the normal characterized by a return to anatomical or psychical conditions present in earlier periods of evolution, whether in the primary types of mankind or in the anthropoid apes. "Anthropometrically, the criminal type represents the extreme values; zoölogically, it represents the primatoid characters; developmentally, cases of incomplete development, such as are found here and there in all nationalities."

Of interest also, in view of present discussions on eugenics, is Lombroso's opinion that, with respect to "morally insane" individuals, in cases in which the condition is so marked as to render these persons a menace to society, "the inadequate powers of natural selection ought to be supplemented by the deliberate selection (exclusion from reproduction) of anti-social individuals." In an appendix to the book are interesting facts concerning Lombroso's experiences with "spiritualism."

The translator is to be thanked for placing this valuable commentary within the easy reach of English-speaking readers. The book will not only prove of great utility to the psychiatrist and criminal lawyer, but should be read by every physician interested in sociological problems. The translation is excellent.

PRACTICAL GYNECOLOGY. A Comprehensive Textbook for Students and Physicians. By E. E. Montgomery, M.D., LL.D., Professor of Gynecology, Jefferson Medical College; Gynecologist to the Jefferson Medical College and St. Joseph's Hospitals; Consulting Gynecologist to the Philadelphia Lying-in Charity and the Kensington Hospital for Women; Consulting Surgeon to the Jewish Hospital. Fourth Edition, Revised and Enlarged. Octavo of xxii + 857 Pages, with 589 Illustrations, for the Most Part Original. Philadelphia: P. Blakiston's Son & Co., 1912. Cloth, $6.00, net.

In the fourth edition of this work the arrangement of the various parts of the subject considered has been somewhat modified. The book opens with special anatomy, which is followed, in turn, by physiology, etiology, diagnosis, therapeutics, and finally by a systematic consideration of the various gynecological diseases. Obsolete matter has been omitted, and recently acquired knowledge introduced. The sections on inflammatory affections of the uterus and of the peritoneum have been largely rewritten, and vaccine and serum therapy given full consideration. Microscopic diagnosis and the methods of blood study have been rewritten by Dr. P. Brooke Bland.

As before, this work constitutes a most lucid and practical presentation of the subject of gynecology. A large amount of space is devoted both to questions of diagnosis and of treatment. The author gives explicit details in describing therapeutic procedures,—a feature

calculated to render the work of great use to the practitioner, who, too frequently, in works of reference he has occasion to consult, finds only general, more or less vague information concerning the measures of treatment to be prescribed. The illustrations are numerous and well chosen.

In the section on spinal anesthesia, we note that the author fails to mention any other drug besides cocaine. Other forms of anesthesia, however, are well described. The author states that he has given up the preoperative administration of morphine and scopolamine, having found by experience in 100 cases that more patients suffer from nausea and vomiting after this procedure than when ether is given alone.

CURRENTS OF HIGH POTENTIAL, of High and Other Frequencies. By William Benham Snow, M.D., Author of "A Manual of Electro-static Modes of Application, Therapeutics, Radiography and Radiotherapy," "Therapeutics of Radiant Light and Heat and Convective Heat"; Editor of the Journal of Advanced Therapeutics, and Late Instructor in Electrotherapeutics in the N. Y. Post-Graduate School, etc. Second Edition. Octavo of xvi + 275 Pages, with 63 Text Illustrations and 5 Plates. New York: Scientific Authors' Publishing Co., 1911.

This is a concise, clearly written book on the nature, effects, and therapeutic uses of high-potential electric currents. The author has treated not only of the high-frequency currents of great potential, already discussed in other treatises, but also similar currents of a lower rate of frequency, the value of which, he believes, has been generally lost sight of. The second edition embodies descriptions of new apparatus, with appropriate illustrations, mention of the newly discovered therapeutic uses of the high-potential currents, and a consideration of the findings of the committee on standardization of physical therapeutic measures which has been at work in the last few years.

The first part of the book is devoted to the various "static modalities"—the static wave-current, the induced current, disruptive discharges, the convective discharges or effleuve, and the high-potential currents with vacuum tubes. The high-frequency currents are next considered, more especially from the standpoint of the apparatus used, which is described at length. Finally, the physiological effects of high-potential currents in general are described and their therapeutic uses in diseases of the circulatory and nervous system, as well as in inflammations, set forth. The author strongly advocates the use of high-potential currents in cases of arterial hypertension, though admitting that in some cases—those of general arteriosclerosis with persistently high blood-pressure—they may fail to exert the effects otherwise regularly produced. That the current does not depress the heart is shown, he believes, by this very resistance to its effects in certain cases, the blood-pressure remaining practically unchanged notwithstanding the fact that these "resisting cases" occur in old people. It is to be remembered, however, that cardiac depression does not always show itself in a fall in blood-pressure; retention of an extra amount of carbon dioxide or other products resulting from a diminished circulation dependent upon cardiac depression may, on the contrary, bring about a tendency to rise of blood-pressure, which will mask the cardiac depression. Hence it would seem that more direct evidence should be forthcoming before it can be considered proven that the high-frequency current will not depress the heart. According to the author, general benefit is produced, however, even in the cases where the hypotensor action of the current fails. Some other effect besides the circulatory one must therefore, it would appear, come into play.

On the whole, this book may be said to present in excellent fashion the particular branch of electrotherapeutics with which it is concerned. It is from simply written and easily understood works such as this one that the practitioner who desires to add electrotherapeutics to his qualifications can best gain an idea of the armamentarium likely to be required and the possibilities of good which its intelligent use will procure.

The General Field

Conducted by A. G. CRANDALL

Danger to the Growing Child

The ease with which urban housekeepers can secure the basic elements for a timely meal by going "just around the corner" places many city children too much at the mercy of milk venders and the manufacturers of prepared cereals.

In a growing child breakfast or lunch made up of a cheap cereal food combined with stale milk is not calculated to lay the foundation for sound future physical health and mental poise.

It is probable that aside from the misleading appearance of the prepared cereal foods which deceive the eye, making it appear that there are more food units in a given bulk than naturally exist there, the manufacturers of cereal foods are in the main delivering an honest product; but the retail milk dealer, in a large number of instances, is not, and only the shadow of the penitentiary looming up in front of him all the time will make him do it. In this matter he finds the public ready to play into his hands through their protests against any increase in the retail price of milk, notwithstanding that the cost of production is steadily on the rise and has been for years. In order to supply milk at the level rates demanded and make for himself a liberal profit, the milk wholesaler reaches out in some instances, several hundred miles to the remote rural regions, for his supply, with the result that the customer has milk delivered to his door which has reached an age when it has lost to a large extent its nutritive value, not to make any reference to its palatability.

Of all the enterprises which are being put forward for the benefit of the ordinary consumer, there is nothing more important than the proper regulation of the milk traffic in the average large city.

Concealed Weapons

The murder of a popular young policeman in Philadelphia by an irresponsible degenerate boy of 17 or 18 years of age again illustrates the lack of public sentiment in the matter of concealed weapons. In this instance, the unexpected too handy use of the revolver wiped out a very useful life and placed the ban of a murder charge on a boy hardly passed the years of adolescence.

There is seldom an excuse for the ordinary citizen to carry a revolver. Indeed the revolver has no place in private hands in a civilized community. It is of little or no value in the shooting of game, and it is almost an axiom that its possession by a private citizen is contrary to law and order and the public interests.

Political Sanitariums Needed

The philanthropic functions of the national government have been gradually extended until they cover a great deal more than the distribution of free garden seeds.

A government horse farm is said to exist in Colorado, and there are well-equipped penitentiaries at Leavenworth and Atlanta.

The marine hospital service has been established a long time; but what is most needed at present is the installation of a few thoroughly modern government sanitariums for politicians who have become prostrated from the strain of

selecting a chief magistrate once in four years.

A large number of wrecks must necessarily result from the arduous labors of 1912. It is doubtful which will prove to be the most debilitating in its effects —the convention so called at Chicago, or the convention in Baltimore. The self-restraint necessary to prevent fist fights in Chicago must have been a tremendous physical tax, but it is possible that the mental strain at Baltimore, occasioned by hearing the "houn dawg" song day after day, may have been even more demoralizing to the nerve centers.

Two political sanitariums should be at once provided and maintained at the government's expense, and it is more than likely that a hospital for the "ruptured and crippled" would be well patronized.

Poetry as a Mental Sedative

Statistics which can be used for a great variety of purposes are said to show a great increase in the number of those afflicted with mental disorder. The number of insane persons has doubled in some districts in the past forty years.

Coincident with the increase of insane people has the product of poetry declined. Few literary people become wealthy, and the poet's chance is said to be about the poorest of all.

At one time reading poetry was a favorite form of literary diversion. Writing poetry was also very much in vogue. Few American families suffered bereavement during the '50's and '60's without having their feelings soothed by a few lines of poetry dealing with the virtues of the departed and signed with the initials of a near relative.

Evidently what is needed is more poetry—poetry with the good, old-fashioned, somnolent ring, dealing with birds and flowers, and calculated to soothe the mind and quiet the throbbing nerves. With fewer novels and more poetry, there will be less need of the retreat for the mentally afflicted.

The Common Scold

The pioneer type is usually a vigorous one. Some of the early settlers of America who spent two and three months getting here on very slow vessels, and were glad to be alive when they finally landed, still had the courage to regulate some of the nuisances of society soon afterward.

They established the ducking pond for the common scold. This probably did not indicate a high degree of culture, but it did show a tremendous amount of common sense. It is in fact an unfortunate thing that that custom went out of existence, as the need of its application seems to be greater today than ever before.

This is supposed to be a cosmopolitan era wherein the American understands the German, the German understands the Frenchman, and the Frenchman comprehends the peculiarities of the Englishman. The fact is, however, that owing to the propensity above referred to, there is a great variety of caustic criticism going on, international as well as national, which is not only in bad form, but often based upon very flimsy foundation.

Some most excellent lay writers have described the physical depressions occasioned by ill-nature and the habit of passing unfavorable opinions upon others. It is unfortunate that this could not be more commonly understood.

The year 1912 has seen a worse epidemic of left-handed compliments than any previous period. Peevishness

seems to exist everywhere. Even if the criticisms were based upon facts, it would be a relief if for a season our minds could be diverted by a different kind of facts.

The Force of Gravity Still Working

The aviation outlook seems to contain all the uncertainties which have been in evidence in previous years, and a very considerable waning of the enthusiasm which enlivened the situation a year ago.

There is still something (very essential) lacking in the equipment of the heavier-than-air machines, and the practical certainty that the most skilful aviator is assured of a violent death, if he persists in his profession, is well calculated to dampen the spirits of the most undaunted operator. Unless there is a chance that skill and unfailing nerve can be depended upon to meet any ordinary situation, then aviation loses all its charm as a sport and all wise people can well refrain from it.

What is evidently required as a solution of the aviation problem is less experiment away from terra firma and a deeper study of the intricate problems in the workshop.

Curious Indifference

It is seldom that the medical profession as a class puts itself on record in any way with reference to the control of the alcoholic habit. The doctor seems reluctant to take any decided position on the subject, although he is fully aware of the disastrous results following the establishment of an impelling habit.

Just why this lack of apparent interest is hard to say. It is probable, however, that every physician recognizes that certain individuals have inherited weaknesses which will lead them to the use of some form of stimulant, and that this knowledge subconsciously acts on the doctor's mind and produces the apparent indifference which he usually manifests on this far-reaching problem.

A form of stimulant or tonic which would supply this constitutional lack without inflicting serious harm would be a panacea, indeed. The acknowledged influence on the bodily tissues of tea, coffee, and tobacco is such as to raise the question as to their being used freely. Altogether it looks as though, when the human race gets a little better knowledge of physiology, they will find that they must get along without any habitual stimulant whatever.

The Incredulous

Whether or not Freud's theory of nervous diseases is correct, the fact remains that either certain kinks in the nerves or of the long-suffering liver help to produce some very incredulous citizens.

One of the first evidences of the above form of stubbornness is unwillingness to believe that which should be obvious.

Probably the doctor is the worst sufferer as a consequence of this form of mental aberration among the public. There are some people so cranky that they are unwilling to give the doctor or anyone else any credit for anything; so they have become Christian Scientists by streaks and experiment on themselves at other times when their faith in Christian Science happens to get down below par. Usually, however, the doctor has something to say about the last week or two of the incredulous man's existence.

A large number of people would be greatly benefited if they could have a little better knowledge of the direct connection between their process of digestion and their mental and moral outlook

upon life. One of the simplest and most common formulas for getting rich is to put on the market a cathartic with a high-sounding name. There have been people who were prone to criticise the motives of these manufacturers, but, after all, it may be that they contribute their small part toward the common weal.

Laxity in Selling Poisons

There is altogether too much latitude permitted the average druggist in the matter of dispensing poisons. A certain number of people are more or less irresponsible, either through mental or moral defects, and to allow them full liberty in the matter of procuring poisons is to place legal sanction upon one more possible death-dealing agent.

Poison should not be sold except on the doctor's prescription. In certain instances, of course, this would involve paying the doctor a small fee, but as a guardian of public health he is entitled to all that may naturally come to him in that way.

Aside from the ordinary danger resulting from the indiscriminate sale of poison, there is always one lurking menace which can be well regarded with dread. Coincidence plays an active part in many of the misfortunes that come to us. A person buys an active poison at the drug-store. Another person of the same household dies suddenly soon after. It is almost impossible to prevent an atmosphere of suspicion developing around that household. Although the toxic dose may have been the result of an accident, the chief actor in the trans action is not able to testify and the finger of suspicion may be pointed at an innocent party.

To be sure, it would be an inconvenience and arouse impatience in many quarters if a person of average business judgment were required to secure a permit to buy rat-poison. Nevertheless it would have a tendency to produce a higher sense of responsibility and more care in the use of the article purchased.

Unfit Marriages

Exactly on the same plan which at one time placed a fringe of saloons along the river bank opposite the prohibition State of Iowa, there can usually be found, along the borders of a State which has established a reasonably safe code of marriage laws, numerous Gretna Greens where runaway couples can quickly get married and no questions asked.

While this does not literally describe conditions existing at Wilmington, Delaware, the fact remains that runaway couples from Pennsylvania have enabled certain unscrupulous wearers of the ministerial cloth to do a thriving trade in tying matrimonial knots which too often become loosened at an early date.

The jealousy which exists in a good many States as to the possibility of the national regulations overlapping the borders of the State, and interfering with State rights, should certainly be laid aside in the matter of marriage laws so that there could be generally established a code which would prevent what has become one of the great national errors—the marriage of the irresponsible and physically unfit.

All that is necessary for any State to show the right attitude on the marriage question is to enact a law which requires the lapse of two or three days' time between the issuance of marriage licenses and the actual performance of the ceremony. Such a law is urgently neded in all parts of the country.

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Original Articles

PRESIDENTIAL ADDRESS BEFORE THE AMERICAN THERAPEUTIC SOCIETY.*

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MONTREAL, CANADA.

MEMBERS OF THE AMERICAN THERAPEUTIC SOCIETY:—

IN opening the Thirteenth Annual Meeting of our Society my first duty is to thank you for the honor you have conferred upon me in electing me as your presiding officer for the society year which is so shortly to close. Appreciating the honor deeply, it has been my endeavor to make this meeting as interesting and profitable as possible, although I am conscious that it will by no means reach the high-water mark of some of your previous meetings; I allude more particularly to those in New Haven, in Washington, and in Philadelphia.

In making the arrangements for the program I have had willing and able assistance rendered by all the members of the Program Committee, and by our very able Secretary. To each individually I tender my thanks.

It is also my privilege to welcome the Society to Montreal. On behalf of our university, our profession, and of the citizens generally, I bid you welcome to this city, the largest and most prosperous in our Dominion.

As you may have noted, Montreal is delightfully situated on an island lying at the junction of the two noble rivers, the St. Lawrence and the Ottawa. In 1535, Jacques Cartier first sailed up the river and landed on our shores, and after climbing to the top bestowed upon the mountain the name of "Mont Real." It was not, however, until 1642 that Montreal was definitely founded by Paul de Chomedy, Sieur de Maisonneuve, at the head of a band of enthusiasts, who conferred upon their settlement the name of "Ville Marie." As the name implied, theirs was a religious undertaking, and

* Delivered at the Thirteenth Annual Meeting of the American Therapeutic Society, held in Montreal, Canada, May 31 and June 1, 1912.

New Medical Building of McGill University, where the Therapeutic Society meeting of 1912 was held.

was an attempt to found in America a veritable Kingdom of God; its inception was stimulated by stories of heavenly voices, of divine revelations, and providential occurrences. For many years, however, the founders had need of all their enthusiasm, faith, and personal energy in repelling the attacks of the powerful Iroquois Indians who surrounded them. Perhaps no other city in America can boast of so many stories of romance and heroism, many of which are told in a most charming way by your delightful writer, Dr. Parkman. For more than one hundred years the city was a stronghold of the French colonists and grew rapidly in size and importance, becoming the center of the profitable fur trade with the northwest. It was the post also from which many hostile expeditions were sent out against both the English colonies on the south and their cruel allies, the Iroquois, to the west and southwest. It was from Montreal, also, that Joliet, Marquette, Du Lhut, Hennepin, La Salle, and many others started on their adventurous careers for the exploration of the western rivers and wilds of your country.

In 1760, the year after the fall of Quebec, Montreal was captured by the English, and Canada became a British possession. Sixteen years later, during the winter of 1776 to 1777, it was occupied by General Montgomery, of the then Revolutionary Army, and during that year Benjamin Franklin, residing in the building which still stands on Jacques Cartier Square and is known as the "Château de Ramezay," in vain endeavored to persuade the Canadians to join in the American revolt against England. The following summer, however, again saw the British flag floating over the citadel of Montreal. For the next twenty years the city was the scene of many conflicts and much romantic adventure owing to the furious contests between the northwest traders and the Hudson's Bay Company. After the fusion, or merger as it is now called, of these rival companies, conditions became more settled and the city became the entrepôt for all the fur trade of both the northwest and the region surrounding Hudson's Bay. Here the merchants associated with this trade lived as princes and spent their profits in generous hospitality, and their names still survive in many of our squares and streets. One of them, Mr. James McGill, who died in 1813, left all his property, valued at the time at thirty thousand pounds sterling, for the foundation of an institution of learning to be called by his name. It is under the auspices of the university founded by him that you meet today.

As stated in our Constitution, the object of our Society is the promotion of therapeutics, a term which may be made to cover the whole of medicine. Therapeusis, the cure of disease, is the end of all medical study, and the term used in this broad sense embraces all means which have to do with the saving of life, the relief of suffering, and the conservation of human energy. It thus may include remedial measures of all kinds—hygienic, dietetic, psychotherapeutic, climatic, hydrotherapeutic, and gymnastic—and all knowledge which may lead up to the proper application of these measures to the individual case. It may also embrace surgery itself. Under such a definition our Society embraces all medicine.

Employing the term in the more limited meaning under which it is

generally understood, namely, that department of medicine which has to do with remedial drugs and remedial measures, as differentiated from those branches of medicine which have to deal with the study of the causes of disease and with its diagnosis and prevention, I have asked myself whether therapeutics today takes the place which it surely ought to hold in medical teaching and in advanced medical thought. To many it appears to fail in doing so. There are few of our great internists who have not for many past decades been more or less permeated with "Osler's black, helpless, hopeless, therapeutic pessimism." It is only recently that an eminent American pharmacologist wrote as follows: "A generation ago therapeutics was an art, promising to develop into a science. At present it cannot be classed as an art, certainly not as a science; it can only be regarded as a confusion." In a recent work by an English physician I read as follows: "Although surgery during the last fifty years has been advancing by leaps and bounds, general medicine has been standing comparatively still. When it has moved at all it has been chiefly on the lines of elucidating the causes of disease, of improving our methods of diagnosis, of discovering new means for its prevention. As regards treatment, it has remained very nearly as empirical as it was a century ago. Perhaps this is rather a hard saying, but in the main it is a true one." That there have been many changes, however, is apparent to all.

Will you pardon a personal reminiscence of the various phases in treatment which have taken place since I was a student in the late sixties of last century and listened to the lectures of my most revered teacher, Dr. R. Palmer Howard, than whom few teachers had a clearer mind, or a greater faith in the value of drug therapeutics. I can recall the numerous instances in which bleeding was recommended, although perhaps with some hesitancy; the frequency with which mercury was ordered in many inflammatory conditions until the gums were touched, and the confidence with which tartar emetic was given in the early treatment of pneumonia. I have a vivid recollection, some years later, of pouring over the pages of my Ziemmsen by night, reading the enthusiastic Liebermeister, and dosing my toxic patients on the following day with 20 or 30 grains of quinine, given two and three times a day, in the vain hope of lowering temperature and antagonizing the infection. I have sat up on many occasions all night at the crisis of a pneumonia, administering alcohol with a very free hand, so that but little was left in the bottle of brandy by the morning; and it was but yesterday that I have plunged my typhoid patients, to quote Osler, "sizzling hot, into a bath of iced water, for a quarter of an hour at a time, and watched them, all cyanosed, shiver and chatter in a vain attempt to regain at least comfort."

It is seldom that any of these treatments are carried out in their entirety today. As for tomorrow—well! there are those who claim that the methods of therapeutics, like the fashions, return in cycles. I often wonder what my students forty years hereafter will think of the prescriptions I now recommend them. And the results in the past and in the present? With a few notable exceptions, not very different.

Indeed, it must be recognized that among the hundreds of drugs in our

Pharmacopœia and Dispensatories the drugs that cure—our specific remedies—may be counted on our fingers, and some physicians would even say, on the fingers of one hand. All the others assist us only in the relief of symptoms; too often with this symptomatic treatment the physician trusts to nature, and plays to the gallery.

And, in trusting to this *vis medicatrix naturæ*, what a wonderful revelation of her powers in combating disease has been made to us by the studies of Metchnikoff, Ehrlich, Morgenroth, Wassermann, Wright, and many others! How dimly have we up to the present appreciated the fact that there resides within the animal body a set of potential forces, capable when aroused and stimulated of exercising a highly effective control over almost all forms of disease! In common with the rest of the medical world we are amazed at the marvelously perfect means possessed by nature, under favorable circumstances, for the destruction of the damaging agent and for the restoration of the damages wrought by disease. Ehrlich writes: "Nature provides in the most perfect manner charmed bullets which strike only those objects for whose destruction the organism has produced them."

Is there a more interesting story written than the description by Ehrlich of the struggle between the invading parasites and their unfortunate host; of the parasites with their toxins, their mutations, and their dodging into dark and hidden places to avoid attack, and, on the other hand, of the gradual development of defensive powers by the host, till finally, by means of his phagocytes, his antitoxins and antiendotoxins, his amboceptors, his agglutinins, and, lastly, by his opsonins, he attacks, and, given a fair fighting chance, defeats, the invaders? In a small percentage of cases only is he in the end himself overcome.

The investigations that have been carried on along this line of thought during the past decade have demanded and will demand the co-operative action of many observers. In the elucidation of these mysteries of nature the general practitioner has but a small place. Such investigations require time, a perfection of laboratory resources, the permission to experiment upon the lower animals, and, most important of all, enthusiastic master minds open to all the whisperings of nature. As a rule they can be carried on only in institutions or colleges endowed by governments, as in Germany, or by generous private individuals, of whom America contains so many notable examples. May the day for Canada soon arise when her rich philanthropists will consider that in no worthier way can their money be spent than in the elucidation of the mysteries which still enshroud our knowledge of the conditions under which we suffer, live, and die.

Our belief is that in strengthening this wonderful mechanism of nature lies the therapy of the future; but there is still an infinity to be learned, for the mysteries of the antibodies have as yet scarcely been fringed. It was a great disappointment to our rising enthusiasm when Sir Almroth Wright's too hopeful statements regarding the opsonins appeared to fail. To obtain by a culture-growth knowledge of the precise organism that is causing a patient's malady, and to learn by examination of the blood the exact condition of the

antagonizing power in that patient's blood-cells and serum, and with the knowledge so obtained to work along nature's lines, reinforcing the resisting powers and checking the development of the infecting organism, is "a consummation devoutly to be wished."

In connection with these thoughts let me remind you that no advance in therapeutics has been of greater value to the world than the modern appreciation by physicians, and, altogether too slowly, by the general public, of the advantages accruing from the breathing of fresh air, of sleeping in it, working in it, and as far as possible of living in the open. It is undoubtedly one of the greatest stimulants to the activities of the phagocytes and to the development of the various forms of antibodies that the physician today possesses. Doubtless also, the great value of climatotherapy, of hydrotherapy, of psychotherapy, and possibly also of electrotherapy depends on a similar stimulation of this wonderful defensive mechanism of nature. Bier's method for the induction of local hyperemia likewise affords the physician a means for the reinforcement of these natural forces at any desired spot.

Much valuable thought along these lines has also been given to the profession by our respected confrère, Dr. Sajous, who in his philosophical presentation of the action of the adrenal, the thyroid, and the pituitary glands has told us of the active part which he believes they take in the development of these antibodies. The profession all over the world places a high estimate on the researches which his enthusiasm and his unflagging energy have carried out in connection with the various activities of these internal secretions, and we hope to hear still further from him at our present meeting.

But although I speak in this strain, I am by no means willing to be classed as a hopeless pessimist regarding the value of drug therapy. On the contrary, I have a strong belief in the limited value of the great majority of our pharmacopeial drugs when used with a definite knowledge of their action; of what they can do, and what they cannot do; of the lines in which they may help, and of the many ways in which they can harm. Only when we know the exact physiological action of a drug, both in health and under pathological conditions, are we able to use that drug in a useful, purposeful way and to avoid its undesired and too often toxic side-effects.

The outlook in therapeutics has been dark because hitherto therapeutics has been taught as a mere empiricism. The future is bright because in all our best medical institutions of learning the students today are taught practically, as well as theoretically, the action of each drug. No man who has observed the definite action of a drug in his laboratory is likely to develop into an agnostic in therapeutics, and it is my belief that, if the many brilliant internists who at the present are therapeutic pessimists had had the advantage of a practical training in a modern pharmacological laboratory during their student days, they would now speak with a clearer, and frequently with a more optimistic, note in reference to therapeutics.

During the past year therapeutists have been greatly encouraged by the success which has attended Ehrlich's persevering investigations into the modifications of therapeutic action by variations in chemical structure. Animated

by the belief that pharmacological action is dependent upon the relative affinities between the cells and tissues and the drug, an affinity which determines its distribution in the system and the special cells to be brought under its influence, he finally demonstrated that these affinities may be altered by variations in chemical structure often of a slight character.

The story of the confident steadfastness with which he carried out his investigations, even from the time of his student days, is a record of wonderful perseverance. Thousands of substances had to be examined by chemical and animal experimentation. He tells us that he himself examined over 600. Now all the medical world is aware of and rejoices in his final success.

A similar investigation is now being carried on in the Rockefeller Institute, where Flexner is endeavoring to elaborate some modification of hexamethylenamine which, while retaining its central formation with its effective germicidal action, may develop a specific affinity for, and a toxic action on, the micro-organisms of poliomyelitis.

Success will doubtless come with time, for it is our confident belief that increasing knowledge of the subtleties of chemistry will in the not distant future provide the physician with many drugs having a specific action on certain forms of disease, and thus enable him to gain the victory, or greatly assist the powers of nature in overcoming the disease.

In anticipation of this time, however, there has arisen an impatient demand among physicians for new remedial agents, and as a result numberless commercial houses are foisting upon the profession an enormous array of new drugs with catchy and therapeutically suggestive names. Of these a few may have some value; the majority unfortunately have little or none, and some appear to be distinctly harmful. Of the exact action of these drugs for good or evil we have no knowledge except the statements of the commercial houses introducing them, which are invariably much prejudiced. Many of the new drugs introduced, even by reputable houses, have been shown by analysis to have a composition differing greatly from that stated. It appears to me therefore to be of the utmost importance that physicians should accept all unproved statements very cautiously, and should for the present rely almost entirely on the standard preparations of their Pharmacopœia, of which they know the exact composition and physiological action.

In the detection of the false and the uncovering of wrong, the work done by the Council on Pharmacy and Chemistry of the American Medical Association has been of the greatest value. All honor to the men who so nobly carry on this work without remuneration and in such an unostentatious way!

Let me say here how highly the profession in Canada appreciates this work and the proposition of this Council to institute a critical study of many of the more important problems in therapeutics demanding investigation. It is stated that a compilation will be made of all available data and supplied to all members of our profession who will assist the work with careful clinical research. Later on, digests and monographs will be furnished giving the results of this work, and these will supply the profession with facts upon which dependence can be placed.

Such an effort should have not only our good wishes, but our active co-operation. In my opinion this Society should take a prominent part in all such investigations.

HIGH-FREQUENCY DESICCATION. A SECOND REPORT. ITS USES AND LIMITATIONS IN SURGERY AND DERMATOLOGY.*

By WILLIAM L. CLARK, M.D.,

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The desiccation treatment of neoplasms was presented to this Society, February 8, 1911.[1] Since that time many additional clinical tests have been made. At the present stage of its development the uses and limitations of this method are more clearly defined, and a second report seems justifiable at this time.

Desiccation of living animal tissue is an effect produced by the proper application of an accurately measured electric current of high tension. For superficial destruction, no bare electrode comes in direct contact with the tissue, but the current from one pole is concentrated and thrown from a metal point through an air space to the tissue in the form of sparks of great frequency, the other pole being grounded. For deeper destruction, the bipolar method is used; the metal point is brought in contact with the tissue, and the large passive electrode is placed at some indifferent part of the body.

A static machine of large output (2.5 to 3.5 milliampères) is used to produce the initial current, which is stepped up by a carefully measured capacity (0.00042 microfarads to each Leyden jar) and an accurately attuned resonator. The current from a coil or any magnetic device will not produce the desiccation effect on account of the interruptions in the primary; and as no discharge can be transmitted to the body until such interruption occurs, the current is delivered in a series of hot discharges, which renders the thermic degree inconstant and the impact against the tissue painfully severe. A steady flow of current, as is procured from the static machine, is necessary, but it must be of large output, and subject to perfect control, or it will fall short of the desiccation point.

Desiccation should not be confused with fulguration, or with high-frequency cauterization and coagulation. The first devitalizes by drying the tissue, the second shocks and produces hyperemia, but does not destroy, and the third is essentially the same as the ordinary cautery, though perhaps deeper in effect. It is possible with the same apparatus, by attaching a controlling device, to produce all thermic degrees ranging from hyperemia to cauterization. The desiccation spark is not hot enough to carbonize, but of sufficient heat to cause rapid dehydration of the tissue, rupturing the cell-

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* Read at a meeting of the Philadelphia County Medical Society, Jan. 24, 1912.

1 "A Preliminary Report upon the Destruction of Surface and Cavity Neoplasms by Desiccation. A New Electrical Effect," New York Medical Journal, June 10, 1911.

capsule and converting the area treated into a dry mass. It has the power of penetrating into the tissue from a small fraction of an inch to one inch or even more, depending upon the frequency, distance of the electrode from the body, time of exposure, and density of the tissue. Not only can an area the size of a pinpoint be desiccated without infringing upon the normal tissue, but a growth of considerable size may be destroyed by one application, though this is not always desirable. Desiccation destroys tissue without opening blood- or lymph- channels, and will act as a styptic when there is oozing of blood. It sterilizes all tissue upon which it acts directly, as has been shown by careful experimentation with cultures taken before and after treatment. The desiccated tissue acts as a foreign body, and a positive chemotaxis is promoted, which probably accounts for the rapid repair. The dry crust which forms acts as a natural dressing, and separates in from three days to one week. Regeneration of skin or scar-tissue usually takes place underneath the crust. The procedure is not very painful if applied with correct technique. In supersensitive individuals a local anesthetic is employed, either by topical application, in the case of mucous membranes or ulcerated surfaces, or infiltration, when the area is covered with skin—although the latter is never practised when there is a suspicion of malignancy, the ionic diffusion of cocaine being preferable. In rare cases a general anesthetic is required.

In the more important conditions for which desiccation is applicable, its uses and limitations are as follows:—

Warts and Moles.—These are usually destroyed with one application. A dry crust at once forms, which separates and falls off in from three days to one week, depending upon the size of the area destroyed. Regeneration of skin takes place underneath the crust. The slightly red area gradually fades to normal color. There is no contracture as from a burn, and the cosmetic effect cannot be improved upon by any other method. There is no doubt about the wisdom of removing these lesions for other than cosmetic reasons, as it is a well-recognized fact that sometimes cancer has its starting point in an apparently innocent wart or mole.

Pigmentations, Vascular Nevi, Angiomata, and Tattoo Marks.—The results in these conditions have been very satisfactory. It is advisable to complete the destruction if possible at one sitting, unless the area be very large, when a number of different applications may be necessary. When these lesions are superficial, new skin is formed; if deep, scar-tissue or a combination of skin and scar-tissue. The cosmetic effect depends upon the depth of destruction. Care should be taken to destroy the tissue perfectly evenly, and not too deeply, as there may be cupping, irregularity of surface, and, if the spark is not too hot, even a keloid. This may be avoided, however, by careful technique.

Chronic Varicose Ulcers.—Exuberant granulations are desiccated, after which ordinary methods, such as strapping and the silver-nitrate stick, are employed. Several cases which had resisted ordinary methods of treatment healed quite rapidly after the granulations were desiccated.

Acne.—An attenuated spark is used, of the same type as above, but not

carried to actual destruction. The primary effect is local anemia, which is followed by an intense hyperemia. This method is very effective when used in conjunction with proper constitutional treatment.

Neoplasms in Some Hollow Viscera—Bladder.—Using a catheterizing cystoscope, an insulated wire may be passed through the instrument, the bladder being inflated with boric acid solution or sterile water, and tumors readily destroyed by desiccation. When this current is passed through fluids, the intensity should be slightly increased and the wire brought in direct contact with the growth. This work may, however, be done by high-frequency cauterization, as has been reported by various writers during the past year.

Rectum.—Using a special air-inflation proctoscope, through which an insulated wire is passed, growths may be reached and treated by desiccation for a considerable distance up the rectum, including papillomata, ulcerations, cancer (for palliative treatment), and hemorrhoids, if for any reason operation is refused or contraindicated.

Larynx.—In suitable cases tumors of the larynx may be destroyed by desiccation. The laryngoscope or ordinary laryngeal mirror is employed to expose the interior of the larynx, and the current applied by means of an insulated wire curved like a laryngeal applicator.

Eye.—Desiccation may be applied to the conjunctiva in trachoma, dry granular conjunctivitis, and epitheliomata, and to the cornea for ulcerations and pterygium. There is no danger in working near the eye, as the control of the desiccation current is absolute.

Cancer.—The more I see of cancer, the more am I inclined to the belief that, if it cannot be destroyed or removed in its entirety at once by any method whatsoever, it had best be left untouched. This does not apply to such agencies as the X-ray or radium. How often has a slowly growing, mildly malignant cancer been seen quickly to recur and progress with great rapidity after an incomplete operation, with no method known to science able to stay its ravages! The conviction that cancer must be treated radically or not at all is now my guide in giving advice in the treatment of this condition.

In epitheliomata which in my judgment appear to be superficial, desiccation is employed alone, to the exclusion of the curette or scalpel. The destruction is rapid and complete. The fact that blood-channels are not opened appeals to me, and I believe that for this reason metastasis is less likely. Results in this class of cases have been so satisfactory that up to the present other methods of treatment have been discarded. In advanced epitheliomata, where there is deep involvement of tissue, but no granular involvement, curetment is advised, or thorough excision carried considerably beyond the diseased area, followed immediately by desiccation. This seals the blood-channels, and it is hoped that the cancer-cells not reached by the scalpel or curette are destroyed. A course of X-ray treatments following desiccation is advised in these cases. The dose should be massive, killing, not stimulating, and as frequently applied as is consistent with safety; but the rays should be applied only by an experienced operator, as I have seen cases which seemed to have been stimulated to rapid recurrence by what appeared to be improper dosage.

Dr. de Keating Hart, during his recent visit to this country, recommended a new method for applying the X-rays which he calls "thermoradiotherapy," the aim of which is to increase the efficiency of the rays. He claims that the radiosensitiveness of tissue is in direct proportion to its temperature; the warmer the part, the more intense is the action of the rays, and the reverse. To increase the temperature beyond the surface, he uses a method known as thermopenetration, or diathermy, a high-frequency process which causes heat to reach deeply into the tissues, the X-rays passing at the same time. To counteract dermatitis, in addition to the usual leather or aluminum filter, cracked ice between two layers of gauze is applied over the skin, or the surface is moistened with water and fanned to promote evaporation, thereby cooling it. He claims that thermopenetration increases the action of the rays upon deep tissue, and that chilling the skin will prevent dermatitis, even though the treatments are frequent and the dose massive. This method is now being tried to determine its value, and, while it is too early to draw positive conclusions, there is evidence to show that there are grounds for Hart's contention.

Desiccation is employed in such cases only when the wound is left open. When it is necessary to close the incision, as in cancer of the breast, or of the cervical glands, desiccation treatment is not to be recommended, because the *débris* could not find exit, even with drainage. Evidence has recently been presented by de Keating Hart that fulguration is of value here. This is a bombardment of long high-tension sparks applied to the raw field after complete extirpation; there is no destructive action upon the cancer-cells or the healthy tissue, but the shock of impact is said to alter the nutrition in such a way as to render the soil less fertile for the proliferation of cancer-cells. Fulguration is now being tested by me under the best conditions in St. Agnes Hospital, Philadelphia, but no positive final conclusions can yet be drawn.

In cancer of the cervix, if inoperable, desiccation as a palliative measure probably has an advantage over the curette and cautery. It may be done without a general anesthetic; it destroys as effectively, sterilizes, deodorizes, and acts as a styptic.

In cancer of the mucous membranes, such as the tongue, buccal surfaces, or lip, unless seen early, desiccation should not be employed alone, because the glands are usually involved, even though they are not palpable; the diseased tissue must be accessible to expect a good result with desiccation. The correct surgical procedure, then, is complete extirpation of the initial lesion and thorough excision of the glands likely to be involved, followed by desiccation, if the wound is left open, or by fulguration if sutured, and then by the X-ray.

In cancer that is absolutely inoperable, the X-ray should be applied. There is evidence to show that seemingly inoperable cancer may sometimes be made operable by the intelligent use of the ray.

Among other conditions in which desiccation may be used with hope of success are: Hypertrophic tonsils, where there is some contraindication to operation; minor nasal growths, xanthoma, granulations on the tympanum, early Paget's disease, lupus, X-ray and senile keratoses, chancroids, granula-

tions in the urethra, erosions of the cervix, urethral caruncle, condyloma, keloid, certain forms of eczema, and parasitic skin diseases.

Those who are interested in the physics of this current, the detailed technique of application, the experiments from which conclusions were drawn, and various case histories, are referred to the preliminary report. I have withheld many details from this paper, as well as case histories, as they would take me much beyond the time limit. A full report of specific cases is being prepared with lantern pictures, and will be presented at a future date.

In conclusion, I shall say that, while this method of treatment has its limitations, its field of utility is distinct, whether used alone or in conjunction with operative or other measures, and I would urge its general adoption.

DISCUSSION.

Dr. John A. McGlinn: Dr. Clark is to be congratulated on the results he has achieved with this new form of treatment, and also for the conservative manner in which he has presented its claim for recognition. I have followed the doctor in his work, am fairly familiar with it, and wish to attest to its value in the class of cases which he has just detailed. The cases which he has shown speak for themselves, and I know of many others which show just as remarkable results.

Dr. Clark has called attention to a very important fact, viz., the necessity of removing certain cutaneous growths for the reason that they are liable to take on malignant changes as the patient advances in years. The recognition of this fact is to my mind the most important phase of the cancer problem. If the profession would recognize that there is such a thing as a precancerous stage and would advise the proper treatment of certain lesions, such as lacerations of the cervix, benign growths of the breast, gastric ulcer, etc., cancer would in a great measure be prevented.

In reference to Dr. Clark's mention of de Keating Hart, I can say that, having seen some of Dr. Hart's work and listened to several of his lectures, I feel that his method of treating cancer promises much. The illustrations which he showed of patients treated by his method were remarkable, and his results are certainly not accomplished by any other method of which I am cognizant.

Dr. B. A. Thomas: My attention was first directed to high-frequency treatment by the Oudin current in May, 1910, when Keyes, of New York, read a paper before the American Surgical Association on the destruction of bladder tumors by fulguration. Shortly after this it became my province to treat such a case, and on the advice of Dr. Edward Martin, and with the assistance of Dr. Clark, high-frequency desiccation was practised on the case, the result being, after thirteen treatments, complete cure of the patient. The current in this case was generated by a static machine, which, in the words of Dr. Clark, is superior to any coil apparatus constructed for the purpose. However that may be, I am no judge, knowing comparatively little about electrotherapeutics. Nevertheless, we are all practical men and anxious to study promising results. Accordingly the Wappler-Excel high-frequency apparatus was purchased and installed in the Surgical Out-patient Department of the University Hospital, with a view of testing the merits of this machine on all sorts of justifiable lesions, benign and malignant. Since that time three additional cases of tumor of the bladder have been treated and at least temporarily cured, and I may say that the effectiveness of the coil current seemed to me to be as great as, if not greater than, it was in the first case treated by the static current.

During the past year upward of 100 various lesions have been treated. They will not be enumerated here, as the results have been precisely identical with those cited by Dr. Clark.

I think Dr. Clark is to be congratulated upon his work along this line, and, if

he continues to observe the conservatism in the future that he professes at present and has practised in the past, he is bound to direct the attention of the profession to a valuable measure in electrotherapeutics, and one that has received too little serious consideration in the past, not because of its inherent worthlessness, but because of the madness of its enthusiastic advocates.

Dr. G. E. Pfahler: Dr. Clark deserves to be congratulated for having originated this method of desiccation, and I desire to add my personal thanks for having been privileged to see a personal demonstration shortly after he developed the technique.

Since that time I have treated over 500 lesions, consisting chiefly of moles and nevi, in which I think it has the greatest field of usefulness. He who has once seen a mole treated by this method will not think of using any other by preference. The results are prompt, not very painful, and beautiful. When we realize that moles may be the cause of the most malignant type of sarcoma, this technique would be a great step in advance even though it accomplished nothing else.

It is useful in destroying some epitheliomata, but I believe that in each instance it should be followed by X-ray treatment. In one patient who had 2 epitheliomata on the face I treated 1 by the X-rays and got a most beautiful and permanent result after 4 treatments. I destroyed the other by desiccation, thoroughly as I believed, but in three months there was a recurrence. I destroyed it again more thoroughly, and there was a recurrence again in about three months. I have now treated it with the rays and believe that it will remain well.

In my estimation desiccation should not be used to destroy malignant tissue unless the whole of the disease can be removed thereby; in general, where malignant disease cannot be completely destroyed it had best not be tampered with. I have had some excellent results in epitheliomata of the mouth, but one must get them at a stage when they can be completely destroyed at one application, and in each instance careful X-ray treatment should follow.

Regarding the question of instruments I may state that I have in my office a machine of the type described by Dr. Clark; also one like that used by Dr. Thomas, as well as two others, and I can say very definitely that the current obtained from the static machine is distinctly different and more suitable for this character of work than any other. In the treatment of papillomata within the bladder, where one is working in a moist chamber, the effect is rather that of thermopenetration than of desiccation, and for this work the d'Arsonval current such as is produced by the apparatus described by Dr. Thomas does equally well and probably better. But for the work which Dr. Clark has referred to, I believe that the static machine is distinctly preferable.

Dr. William J. Dugan: It affords me great pleasure to have this opportunity of correcting a misunderstanding concerning Dr. Clark's method. At a previous meeting of the Philadelphia County Medical Society it was my privilege to discuss the paper presented by Dr. Clark. My criticism at that time was directed against the writer for claiming that he had cured cases of carcinoma and sarcoma when the diagnosis had not been confirmed by pathological report. Having since learned that Dr. Clark did not claim that he had cured cases of carcinoma and sarcoma, but that he had cured cases that macroscopically resembled malignant growths, I hasten to apologize to him for the misunderstanding. If we have a patient slowly bleeding to death from a papilloma of the bladder, it behooves us to stop that hemorrhage whether the tumor is malignant or not. Such a case has been reported by Dr. Thomas as having been cured by the Clark method after all other measures had failed. There can be no doubt but that it is our duty to remove papillomata, etc., which may in time become malignant, when such removal can be accomplished with no danger and with the excellent cosmetic effect shown by the Clark method.

Dr. Clark, by using a spark of different length from that of de Keating Hart, has arrived at a point somewhere between hyperemia and fulguration. It seems to me

that in desiccation he has demonstrated to the profession an electrical method that will be used extensively when properly understood.

In conclusion, I must admit that some of the work done by Dr. Clark is simply wonderful.

Dr. G. Betton Massey: I understand that in the discussion on Dr. Clark's paper on this subject last year the novelty of his method, as compared with fulguration, was questioned. There can be no doubt that Dr. Clark has given us something essentially different from fulguration, physically, in the process called by him electrical desiccation. His demonstration shows marked physical differences from the effects produced by apparently similar currents from other sources.

The method appears to have a distinct place in surgery, as indicated in the paper, and I am glad to note Dr. Clark's conservatism in dealing with the cancer question. When I began my own method of cataphoric or ionic destruction of cancers some seventeen years ago, I "tickled" these growths with ineffective electrochemical strengths, which led at times to a stimulative action. My later and present work tends more and more to massive bipolar destruction of accessible growths of this nature. Large carcinomas and sarcomas are destroyed by currents as high as 2000 or more milliampères in from fifteen to twenty-five minutes, the bipolar placement of the electrodes confining the action to the growth and its immediate vicinity.

Dr. A. B. Hirsch: I have followed with increasing interest the work of Dr. Clark in medical electricity, being convinced that a new principle of importance in local therapy has been evolved by this original investigator.

The idea of destruction of abnormal tissue by simple though accurate instrumental withdrawal of fluid content, done without charring, this action being strictly localized, will surely have a weighty bearing on methods of treatment hereafter. The fact should be emphasized that a valuable and wholly new combination in electrophysics, based on extended laboratory and clinical research, has been found by Dr. Clark, embracing the dimensions and construction of the static apparatus, the capacity, the resonator, and the electrodes.

Dr. Clark is one of ourselves, and one whom the Philadelphia profession will henceforth surely recognize, reversing the old-time homily as to the prophet in his own land. Well-known authorities of international reputation have elsewhere already accorded him due credit for this method.

This advance in tumor removal once again fixes attention to the strictly scientific methods applied by those who nowadays specialize in electric treatment of disease as compared with empiricism of the like in previous generations. To look askance at statements of successful treatment of various syndromes hitherto thought incurable, as has been the rule with so many of our uninformed fellow-practitioners, must give place to an earnest wish for full training in this as in other physical measures.

Otherwise, American physicians must continue to bear the stigma of being far in the rear of progressive European confrères. Professional opinion here originates largely in the better class of undergraduate medical schools, and any advance must depend upon the faculties,—especially on the chair of therapeutics in these institutions. These teachers will be held increasingly responsible for such improvement in the curriculum, or its neglect. The doctor on this side of the Atlantic must be fully informed not alone on pharmacal therapy, but also on all non-drug methods of treatment; otherwise, the present critical attitude of the laity toward the resistance offered by our profession to such progress will early change to one of open antagonism.

Let us promptly realize, therefore, that such pioneers in electrotherapy as Dr. Clark are to be duly honored for their share in this absolutely necessary growth.

Dr. Clark, in closing: I am grateful for the words of kindness which have been said of my method, especially from those who one year ago antagonized it. Answering Dr. Thomas, I will agree with him that the high-frequency cauterization is effective in destroying moist-chamber growths, but not more so than with the desiccation

method when the intensity is slightly increased. I must take exception with him when he says that cauterization is as effective as desiccation in surface lesions. Four years of comparative study have disproved this, and my contention is borne out by Pfahler, Schmidt, Titus, DeKraft, and others.

Dr. Pfahler's practice of using the X-ray following desiccation, even in superficial epithelioma, is a safe one, and, while I have never yet found it necessary, his mention of recurrence inclines me to accept his idea.

Dr. Hirsch's criticism of those high in council in medical schools is timely, but only partially merited. As Dr. Thomas well says, electrotherapeutics "has received too little serious consideration in the past, not because of its inherent worthlessness, but because of the madness of its enthusiastic advocates."

It must be regretfully said that a large part of the current and past literature upon this subject will not pass scientific muster, and, while it is improving, it is difficult at this time to differentiate the earnest scientific worker from the charlatan. I believe the medical profession is wide open to conviction, and it is only a question of time before the chasm separating empiricism and cold scientific fact will be bridged, to the profit of our profession and to humanity.

THE PROPER TREATMENT OF DIABETES MELLITUS AND ITS CURE BY DIET.*

By LOUIS KOLIPINSKI, M.D.,

WASHINGTON, D. C.

"Après quarante ans de pratique, je n'ai pas encore trouvé à ma clinique un seul diabétique qui ne m'ait trompé, ou n'ait tenté de le faire. Aussi, ai-je peu d'illusions sur la stricte observance des régimes qu'on prétend leur imposer. Il en est tout autrement avec les sujets appartenant à une autre condition sociale, et qui, dans une maison de santé, se soumettent volontiers à certaines obligations parfois pénibles mais dont ils comprennent l'utilité."

R. Lépine, "Le Diabète Sucré."

Upon the mind of the practitioner who has attempted to read the immense medical literature of diabetes mellitus of the past one hundred and fourteen years a throng of startling thoughts force themselves. His wonder is intensified when he muses upon the nature of the disease, its symptoms, its terminations, the mystery of its origin and cause, and the disappointing results of the ordinary and extraordinary efforts at treatment. The whole subject, however approached or surveyed, is confusing, contradictory, and perplexing. On every side one great riddle presents itself. In its development, its pathology, its chemistry, and the organs involved or at fault, the disease has baffled and confused the investigators. Cure and recovery are uncertain, misunderstood, and even relinquished from dread of the inveteracy of the malady.

The practical end to such a train of reflections is the direct query: Can essential diabetes mellitus in man be cured so that health is completely restored and life will run its natural course to its termination in old age?

* Read at the Thirteenth Annual Meeting of the American Therapeutic Society, held in Montreal, Canada, May 31 and June 1, 1912.

From the chaotic heap of theory, experiment, observation, and contradiction composing the medical history of the disease the truth can nevertheless be extricated, and the answer to the question propounded is that diabetes mellitus in man, free as yet from dangerous complications, is easily curable, in proportion to the accuracy and persistency of the treatment, as well as the honesty and truthfulness of the patient.

The fact of greatest significance in the treatment of diabetes mellitus is that it is curable by diet. The fortunate and consistent reasoning of Dr. John Rollo which led to this discovery, successfully applied by him, has not, however, been rightly valued and fully estimated by succeeding practitioners. That diabetes mellitus is curable by diet does not state the principle completely or correctly. Rather must it be said that diet alone is the cure for the disease, that by any other means this is an impossibility, and that the use of any medicine, drug, organ extract, ferment, or enzyme is worthless and therefore injurious.

Before proceeding to a description of the method of diet which has proven accurate and successful in practice, the following working theory of the disease is submitted as one that is simple, consistent, and in harmony with our knowledge of the history of the malady in its progression from the antecedents of a patient until his end:—

Gout and diabetes mellitus are allied and analogous in many respects. Both spring from obesity. The obesity of gout arises from the daily use of alcoholic drink, together with the eating of much food, be the life led that of the wealthy epicure or that characterized by enormous beer drinking in the common man. Alcohol is always, lead occasionally, the direct cause of gout,—primarily of the transmitted form. Gout, obesity, and diabetes mellitus are hereditary diseases.

Diabetes mellitus is not caused by strong drink, but by overeating to a degree of marked robustness in the laborer or of overfatness in the sedentary. Every diabetic has a previous habit of obesity or of excessive eating. Often there is a fondness for particular foods or dishes with an excess of vegetable carbohydrates. Confirmation of this statement can be found with the family of the subject or with his habitual companions; self-observation is always inaccurate.

From these elementary statements there follows: (1) that gout precedes diabetes mellitus, but that the reverse is not true; (2) that diabetes mellitus is more common among people who eat much, but refrain more or less from alcohol,—a fact noted in the Hebrew race; (3) that diabetes mellitus is found in children who overeat, but gout never; (4) that diabetes is much more common in women than is gout because they are less given to drink than men.

The lesions of gout result from the uric acid in the blood and tissues which finds no natural excretory channel, or from the agent of its oxidation or reduction.

The lesions of diabetes mellitus result from a permanent increase of glucose in the blood and its persistent discharge with the urine. The essential cause of this is the destruction, more or less permanently and completely,

of the glycogen-forming function of the liver. All ingested carbohydrates appear as sugar in the blood and in the urinary excretion. It is the persistent excessive consumption of a vegetable or mixed diet which in most cases first leads to obesity,—markedly so in the middle-aged. It is in the less resistant, less hardy and enduring that the conversion of sugar into glycogen in the liver-cells is arrested for all time.

Whether this be due to a permanent vasomotor paralysis in the liver, like that which temporarily results from the piqûre experiment of C. Bernard, in the medulla oblongata, or whether it be a glandular or cellular atrophy, or the absence of a ferment engendered in liver or pancreas or some other agent of internal secretion, the diabetic subject is permanently bereft of the power of extracting sustenance from sugar and starch. He must henceforth abandon the proverbial staff of life—bread—or death will be the consequence.

Granting, therefore, that the liver's glycogen-forming power is destroyed by overuse, that this internal food is no longer stored in the liver-cells, and that through the lymphatic and vascular systems glucose circulates unchanged and unconverted, it is plain that the search for any curative medicinal agent is vain. The continued eating of sugar and starch and the continued glycosuria will hasten to its conclusion a disease always in its nature fatal: acute and rapid in the young, slow and chronic in the old. The youth is doomed by a glycosuria which nothing can retard or suppress. No diet will cause the sugar to disappear; the disease is in the grave or severe form. In the old subject glycosuria may vanish or be lessened in quantity by diet; the disease is in the mild form.

If, however, man can live and grow on a diet containing but very little of carbohydrates or none at all, no evidences of the continued existence of the disease need appear. No sensation or manifestation of ill health will be felt or perceived, and the subject formerly affected will live on in continued good health; for it is admitted by everyone who has studied diabetes that the main source of glycosuria is the food consumed, its amount, and its kind.

That this can be done and is even easily possible will be shown, and the proof will be held to be that such a diet is capable of permanently removing all traces of morbid sugar from blood and secretion, of overcoming all minor non-fatal lesions of diabetes, and of restoring to the body its standard weight and, if desired, an excess thereof.

Having determined in the ordinary case of diabetes mellitus the specific gravity of the urine, the absence of albumin, the presence or absence of acetone and of diacetic and β-oxybutyric acids, and the presence of grape-sugar, by a copper or bismuth test, verified by fermentation of the liquid, the chemical reaction is repeated as a demonstration before the patient, unless the latter be a small child. The chemical manipulation by which grape-sugar is identified is explained. Furthermore, the patient is told that the disease is easily curable by diet, not by drugs, that so long as no sugar is found in the urine he is well, that the finding of sugar means transgression in diet or error in the preparation of food, and that the continued presence of sugar in large or small amount, as proven by the tests employed, will render

the disease a fatal one. It is explained that sugar will no longer be found after the third or fourth day of antidiabetic diet. The patient is furnished with a written or printed copy of the latter, as follows:—

Breakfast.—Artificial milk, eggs, ham or bacon and eggs, beefsteak, lamb, mutton, fish (fresh, salted, or smoked), raw tomato. A small cup of coffee or tea with cream.

Dinner.—Artificial milk, clear broth, raw tomato and lettuce with mayonnaise dressing, onion, cucumber, pickles. Any kind of meat, fish, game and fowl, sausage, tongue, brain, sweetbread. Any kind of cheese.

Supper.—Artificial milk, fish or eggs, cold meat, cheese, schmierkaese or curds; a glass of cream, tea, or coffee with cream.

At Bedtime, if Desired.—Artificial milk or a glass of cream.

After three or four months the following vegetables and fruits may be tried at the same time the urine is tested for glucose (should it reappear the offending food is eliminated): Asparagus, cauliflower, boiled onion, cress, spinach, endive, cabbage, sauerkraut, green beans, turnip, radish, kohlrabi, apples, cherries (Strümpell).

The artificial milk referred to consists of a modified formula of a series of liquid foods imitating milk chemically, devised by the writer and described in the *Medical News,* New York, December 21, 1901. It is prepared as follows:—

1 broken raw egg.
2 teaspoonfuls of malt extract.
4 teaspoonfuls of olive oil.

Beat up in a bowl with a spoon or egg-beater for five minutes. Add gradually while stirring 1 pint of drinking-water. Season to the patient's taste with table salt. In hot weather add crushed ice.

Varied and oft-repeated experience has proven that this dietary is amply sufficient to sustain and nourish the body to the point of inducing an increase of weight approaching obesity, *i.e.,* it is food more than enough for life, comfort, and health.

No medicinal agent is used in the treatment except the following saline purgative, which is administered when the patient is constipated, has hemorrhoids, is obese, or where it is desired to reduce the weight to normal. This combination is most valuable and efficient for relieving an engorged portal circulation. Its action is not depressant, like that of magnesium sulphate or the purgative mineral waters containing it. It acts in thirty to forty-five minutes, and with great certainty:—

℞ Sodium phosphate,
Sodium sulphate ..... of each ℥iv.
Dissolve with shaking in a quart bottleful of cold water.

The solution is a saturated one; a small amount of the salts remains undissolved. The dose is a wineglassful in a tumbler of cold water fifteen or twenty minutes before breakfast or supper. As the indications vary, it may be taken once or twice a day or two or three times a week, for an indefinite period.

Another similar formula in imitation of the constituents of Carlsbad water, but better than this renowned mineral spring, is the subjoined:—

℞ Sodium chloride ..... ʒiij.
Sodium bicarbonate ..... ʒiv.
Sodium sulphate ..... ʒiiiss.
Sodium phosphate ..... ʒiv.

It is dissolved in the same manner and in the same amount of water as the first, and is taken similarly in time and quantity. Its action is somewhat milder, its taste more pleasant, and it is gently antacid.

The diet above described, when partaken of for three or four days, invariably brings the specific gravity of diabetic urine to normal or subnormal, and not a trace of glucose can be detected by our customary tests. With this normal urine the diabetic returns to a state of health, the thirst, hunger, and excessive urination disappearing in a few days. The languor, weakness, and aching of the muscles are no longer perceived. The less grave lesions of the skin—eczema, pruritus vulvæ, furunculosis, carbuncle or phlegmon, and the peripheral gangrene of fingers or toes—heal spontaneously, and acetone, diacetic acid, and β-oxybutyric acid, which may have been found originally, are no longer present in the urine. An incipient diabetic cataract may clear up. The scorbutic appearance of the gums disappears, and loosening of the teeth is relieved. The diabetes is thus cured, as it were, by crisis, and remains so in proportion to the faithful observance of the regimen prescribed. Those diseases which always end life in the diabetic, viz., pulmonary tuberculosis, pulmonary gangrene, chronic nephritis, extensive gangrene of the extremities, or multiple carbuncle, both with profound sepsis and persistent acidosis or diabetic coma, cannot, of course, be cured in this way. But as surely as these complications are always fatal in their progression, so are they always absent in the diabetic whose urine is kept permanently at normal.

With the method described the disappearance of the sugar is absolute and does not depend on how recent or how old the case, how mild the symptoms or how severe, and how little or much glucose is found in the urine. The urinary sugar of diabetes mellitus comes only from carbohydrate food, and vanishes when none is taken and a true antidiabetic diet inaugurated. Glucose in the essential diabetes of man does not come from fat or proteid, whatever may be the condition found in experimental glycosuria, such as is produced by extirpation of the pancreas or resection of the duodenum.

In practice we find, however, ambulatory and unrestrained diabetics in whom a diet as efficient as the one described does not entirely eliminate the sugar from the urine, the glucose persisting with a fixedness that baffles and discourages the inexperienced practitioner. Such cases are those of the "severe type," as first classified by Seegen.[1]

This most unfortunate appellation, repeated everywhere by medical writers, cannot fail to cause much harm in the treatment of diabetes. In these unfortunates sugar still appears in the urine, though the diet be strictly and

[1] Der Diabetes Mellitus, 1870.

wholly albuminous. The liver is unable to make good all of this saccharine waste. The muscle glycogen and that in all other parts of the body is called upon. The nitrogenous and albuminous foods and the fats are likewise supposed to be turned into sugar and all of these sources do not suffice to stop this consumption of the body or mitigate the intensity of the disease.

A diabetic at almost any time or state of his malady when following the diet described begins in seventy-two hours to pass urine entirely free of sugar, which so continues as long as the food is the same. Therefore in each and every instance where glycosuria persists, it means that the diet has not been interpreted correctly and other food ingested in addition, *e.g.*, gluten bread, ice-cream, milk, or other harmful things, eaten in the belief that they are of no significance or else (which in practice is found oftener to be the case) by willful and flagrant disregard of the instructions on the part of the patient. This leads to the unexpected discovery that, although the diabetic solemnly declares that the diet was followed as given, nothing else whatever was partaken of by him as food or drink, and that he is innocent of deception or prevarication, yet he is guilty of both. That anger or haste may not destroy the practitioner's intent to help the sick it is wise to have patience and forbearance; later, by inquiry in the patient's family or of the housekeeper, there will be discovered the obnoxious food or drink responsible for the ill success of treatment. Often the prime mover and instigator of this duplicity on the part of the patient is some member of the family or a relative or friend who either does not favor the principles of proper treatment, is ignorant of the gravity of the disease, favors indulgence in eating to the diabetic, or believes the diet harsh or cruel. To some such influence the victim's integrity yields, and the disease persists as before.

Some diabetics, when their duplicity is detected and exposed, will confess great fondness for eating; others, that the diet is too rigid; others, that the eating of anything strongly desired cannot be followed by harmful consequences, or, lastly, that surely it is against reason and all natural right that bread should be interdicted forever,—not the giving up of fire and water, but of bread, the mainstay of mortal life. This primitive form of daily food is so ingrown into our nature and instinct, is so closely associated with our ideas of aid in hunger and starvation, of charity and alms, that to view it as the prime cause of a deadly intoxication is impossible for the laity to conceive or understand. Yet in this extraordinary malady it must be given up for an indefinite time, or all attempts at cure will be futile.

When at the diabetic's second consultation the urine is found normal, and this fact has been demonstrated to him by the tests already used at the former interview, he is instructed to return every week or two for further supervision. The sugar reaction never reappears, the symptoms are lost, the health returns, and he is at liberty to pursue his customary work or occupation. With a patient who is faithful and adheres rigidly to the requirements a monthly analysis for glucose is sufficient. After six months or a year slight additions of carbohydrates to the diet may be made if the patient so desires. Frequent examinations must be made in order that the physician may convince

himself that such experiments are not harmful in causing a return of the disease. In fact, should the diabetic elect to continue the regimen that has cured him and beyond doubt saved his life from a deadly disease, he should be induced and encouraged by every available argument to follow such a determination.

It is of great importance to guard a cured case from the former habit of overeating and obesity. The diet already described is prone to lead to the latter condition, owing to liberal consumption of the artificial milk. Should the body weight begin to rise above normal or the patient present any evidence of dyspnea or cardiac insufficiency, the daily quantity of the emulsion taken may be reduced, or else a daily dose of the saline purgative already advised employed in order to bring the weight, in the course of a few months, to its normal standard.

Of the use of tobacco and liquor in diabetics, it may be said that neither is harmful and that neither can aggravate the malady. They must, however, be used sparingly and with proper discrimination. Two cigars per day or two or three pipes of smoking tobacco, an occasional glass of whisky, sherry, or of other wine, not sweet, may be allowed, but not commended to the patient. Champagne and malt liquors, particularly lager beer, will prolong the glycosuria indefinitely.

Treatment of Symptoms, Minor Lesions, and Complications.

The treatment of the symptoms, minor lesions, and serious complications of this mysterious malady, diabetes, requires brief and practical discussion.

The symptoms most generally complained of—languor, weakness, thirst, hunger, and excessive urination by day and night—vanish in a few days with the appearance of normal urine.

The eczema, genital pruritus, and furunculosis disappear in a week or so.

It is a characteristic complaint of grave cases to be tired to death, or so tired as to wish for death, and this languor the patient does not observe to disappear as quickly as the polydipsia and polyuria. The use of drugs to relieve these acute subjective symptoms, and particularly the hunger and thirst, is most injudicious, and the praise given to the use of opium by writers of authority is to be deplored.

The *carbuncle* of diabetes mellitus, of all carbuncles, should never be operated upon by excision. It is not at all necessary, and the danger to life is very great. Diabetic coma is always imminent. Far better is it to cure this infection of the skin by means of precipitated sulphur, applied as a powder into the points of suppuration or ulceration, or used as an ointment with a cocoa-butter base (1 to 8). Equally efficacious to render a carbuncle innocuous is the constant application of a compress wet with a solution of calcium creosote.

Extensive *gangrenous phlegmons* must be incised and then thoroughly dressed with the same applications.

Diabetic cataract, when in its incipiency, may clear up under the anti-diabetic diet.

Albuminuria, where faint and incipient, may likewise entirely disappear. Where it is an essential part of subacute or chronic nephritis, an attempt to cure these may be made with a diet consisting of 2 pints of cream a day, whole or diluted with water, and an abundance of curds or schmierkaese. When the albuminuria has practically disappeared, the artificial milk is added to these two foods.

Cows' milk cannot be used in treating diabetes or the succeeding nephritis. With a milk diet it is possible in the nephritis of diabetes to remove the urinary albumin entirely, as well as the dyspnea and anasarca, and very rapidly to increase the strength and weight of the patient; but soon after, the glycosuria, previously very much reduced or for a time even absent, will reappear. With this the diabetic dyscrasia returns in its full intensity. A meat diet now produces a fresh albuminuria, the sugar again receding, and death finally results. It may occur as a result of both diseases,—gangrene of a lower limb and uremia.

Milk has been allowed as a food in diabetes by many practitioners, and has been approved as proper in the diabetic form of nephritis, but not wisely, as it is agreed that the ingestion of lactose in diabetes increases the glucose in the blood. In the abandoned skimmed-milk treatment of Donkin,[2] the singular error was committed of taking away useful food substances and allowing sugar of milk, a harmful one, to remain.

Gangrene, when superficial, heals spontaneously or with boric acid compresses or baths.

Deep or complete gangrene of a limb gives a heavy mortality after operation. In such cases the prognosis is always unfavorable unless the patient reacts to the proper diet, which alone can save the life that is in jeopardy. Gangrene, like albuminuria and all other complications, never appears where dieting has permanently rendered the urine normal.

The *pulmonary tuberculosis* of diabetes is insidious, never chronic, rapidly fatal, with deep sepsis and enormous wasting of the body. Hematemesis may be the first evidence of a disease already established. Equally as fatal as tuberculosis, and sometimes a part of it,—at other times after a croupous pneumonia,—is *pulmonary gangrene.* The antidiabetic diet always eliminates the grape-sugar in the urine, but never retards the rapid progress of either of these diseases.

True glycosuria occurring in the course of typhoid fever requires no treatment until the temperature is normal and convalescence begins. The sugar, as is known, disappears in four or five days from the onset of the fever, reappearing when the disease has run its course.

Syphilis, secondary and tertiary, should be treated as in the non-diabetic. Antisyphilitics, like all other well-known remedies, have no power to alter the state of glycemia, and lues, present or passed, or its treatment, neither aggravates nor mitigates the associated disease.

Beginning acidosis may vanish, and the acids and fat derivatives found

2 Lancet, London, 1869, ii, 1871, 1873.

in the urine in cases near to a fatal ending likewise be removed together with the sugar under the influence of diet; but where great weakness, drowsiness, labored breathing, and beginning stupor herald the oncoming of diabetic coma, the case is a lost one. Perhaps the discovery of a suitable antidote for acetone and diacetic and β-oxybutyric acids in the blood, or of an eliminant, will eventually lead to success, or else, by transfusion or the introduction of enough water into the stomach to dilute sufficiently the poisoned blood, better results may be obtained than those now achieved; but as yet the coma of diabetes is still the most rapidly fatal of all of the dangerous complications to which its victims are exposed.

(*To be concluded in the September issue.*)

THE VASODILATORS.

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I have before me several letters, recently received, in which inquiry is made concerning the relative value of the several drugs employed to reduce dangerously high blood-pressure. In formulating my replies I have found some difficulty in giving definite information which would be sustained by clinical and experimental study. This was particularly so in the case of the vasodilators. A study of literature bearing upon this question resulted in the collection of some valuable data, which I have here endeavored to arrange in an easily available form.

Before proceeding to a consideration of these drugs as a group, I wish to emphasize three important points:—

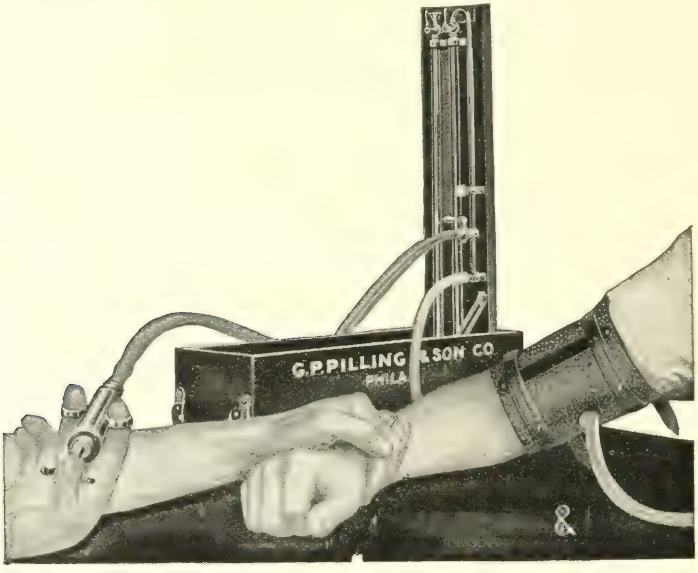
1. The absolute necessity of applying the blood-pressure test as a logical, and the only accurate, means of acquiring definite information concerning the condition of the circulation and the indications for its modification and control. These observations are easily made, occupy but very little time, and when properly charted present a graphic and precise picture, which has the great value of being a permanent record, available for future reference and comparison. The standard mercury sphygmomanometer fulfills all the needs of an accurate and simple instrument, is complete, compact, and presents no difficulty of operation. It is graduated in intervals of 2 mm. and the scale extends to 300 mm. Hg. The cuff, or arm band, is 12 cm. wide, conforming to the requirements of Janeway and others. (See illustration.)

2. The mere finding of an elevated blood-pressure is not necessarily an indication for its reduction. Indeed, the latter should never be attempted unless there is a good and sufficient reason, based on a careful study of the case, for doing so. Long-continued high pressure often becomes a necessity

to the organism, and, if it is interfered with, the patient's circulatory equilibrium will be destroyed and disaster result.

3. Drugs by no means constitute the only agency we have for successfully combating hypertension. They are often not indicated when the same results can be better and more permanently accomplished by other means, including diet, hygiene, hydrotherapy, exercise, and electrical treatments.[1]

The vasodilator group of drugs belong to that large and indefinite class known as the depressomotors. They have a distinctly sedative action upon the spinal cord and other centers, and are used chiefly to reduce nervous irritability.



The Author's Sphygmomanometer.

Though having much in common, the several drugs of this group vary in their selective activity; thus, whereas they all have a tendency to reduce arterial pressure, this effect in many instances occurs only after the administration of a toxic dose, while one at least—calabar bean, or physostigmine—usually elevates the blood-pressure.

The most important vasodilators are: amyl nitrite, nitroglycerin, potassium nitrite, sodium nitrite, erythrol tetranitrate, mannitol hexanitrate, and vasotonin.

Their chief action is to cause dilatation of the arterioles and capillaries, with consequent reduction in arterial blood-pressure. Besides varying in the amount required to obtain physiological effects, these drugs differ greatly also in their rapidity of action, the amount of reduction of pressure, and the duration of the effect obtained. It is important, therefore, to consider individually the more commonly employed members of this group.

[1] A review of literature relating to these several therapeutic measures in diseases of the circulatory organs is in process of preparation and will appear shortly.

Amyl Nitrite.—On account of its volatility, this drug is usually dispensed in glass pearls. These are to be crushed and the fumes immediately inhaled. The first effect of the inhalation of amyl nitrite is hurried, panting breathing, followed by progressively increasing muscular weakness and cutaneous flushing. Toxic doses gradually reduce reflex activity until death occurs from respiratory failure.[2]

As for the effect on the circulation the pulse is increased in frequency and the arterial blood-pressure rapidly diminished. This is due chiefly to dilatation of the small vessels from the direct action of the drug circulating in the blood upon the walls of the arterioles and capillaries, although a minor influence on the vasomotor centers is at the same time exerted.[6]

While usually administered by inhalation, amyl nitrite may also be given by the mouth or hypodermically. The dose by inhalation is 1 to 2 minims; by the mouth, 2 to 3 drops on a lump of sugar to be taken instantly; hypodermically, 1 to 3 minims. The drug is comparatively free from danger; as much as 2 drams given within two hours has been without serious effect. (Wood.)

All the members of the vasodilator group have essentially the same action on the circulation as amyl nitrite, varying slightly because of particular minor characteristics of the individual drugs. Space will not allow of a more extended discussion here.

The subjoined table has been constructed from the most recent literature covering clinical investigations upon the effect of these drugs, in particular from the clinical statistical reports of Wallace and Ringer,[3] Matthew,[4] J. L. Miller,[5] Lauder Brunton,[6] and others. A study of the table will indicate clearly the relative value of the several drugs included in the vasodilator group. The individual selection of the particular drug to be employed in a given case will depend upon the character of the case, the urgency of immediate action, and the effect desired. For a more complete consideration of these drugs in the treatment of modifications of arterial pressure, the reader is referred to the recent literature bearing on this question.

Drug.	Effectual dose.	Beginning of effect in.	Maximal effect in.	Amount of reduction in millimeters.	Duration.	Interval between doses.
Amyl nitrite	1 to 3 mins. inhaled.	1 min.	2 mins.	20 to 40	7 mins.	P. r. n.
Nitroglycerin.....	1 to 2 mins.	2 mins.	2 mins.	20 to 40	30 to 40 mins.	1 to 2 hrs.
Sodium or potassium nitrite	½ gr.	5 to 10 mins.	6 to 16 mins.	5 to 30	1½ hrs.	T. i. d.
Erythrol tetranitrate	½-1½ grs.	3 to 15 mins.	10 to 20 mins.	15 to 50	4 to 6 hrs.	4 to 6 hrs.
Mannitol hexanitrate.....	1 gr.				6 hrs.	4 to 6 hrs.
Vasotonin.....				20 to 40	4 to 6 hrs.	T. i. d.

[2] H. C. Wood: Therapeutics. J. B. Lippincott Co., Philadelphia.

[3] Jour. Amer. Med. Assoc., No. 20, p. 1629.

[4] Quart. Jour. Med., No. 2, p. 261.

[5] Jour. Amer. Med. Assoc., May 21, 1910.

[6] "Therapeutics of the Circulation," 1908.

Before employing any drug of this group, it should be carefully ascertained that the preparation, particularly if a solution, is strictly fresh, as failure to obtain the desired effect may be entirely due to the use of an inactive specimen. Tablet preparations are known to vary greatly in strength and should be of standard make. This defect can, according to some observers, be avoided by the employment of fresh chocolate preparations. Sodium nitrite in solution rapidly loses its activity and should not be kept for more than one week. All these drugs may be employed hypodermically when desired, but for continued use they should, if possible, be given by the mouth.

According to Wallace and Ringer,[3] it may be stated that, as a general rule, the higher the original pressure the greater is the fall, and that an increase of the dose within safe limits seems to increase the fall. These observers were able in their experiments to obtain a reduction in pressure in every case. The effect of a given dose upon the pressure in arteriosclerosis was the same as that produced in a normal individual.

Daniel Hoyt[7] arrives at the same conclusions, but advocates the use of larger doses than those generally employed, attributing failure to obtain satisfactory results to insufficient dosage or the employment of inactive preparations. This difficulty is largely removed when the clinician employs the sphygmomanometer to check his results.

Rudolph[8] noted that the effect of the vasodilators may vary from day to day, and in this connection Miller[9] brought out a very interesting as well as most important point in the clinical action of these drugs, viz., that not only may wide variation in the effect occur from day to day, but different drugs of the same group may affect the same individual differently. He reports the following specific instances:—

CASE I.—Sodium nitrite had no effect whatever; nitroglycerin caused a reduction of 50 mm.; erythrol tetranitrate resulted in a rapid fall of 110 mm., the patient going into collapse.

CASE II.—Nitroglycerin and erythrol tetranitrate had very little effect, while a reduction of 65 mm. followed the usual dose of sodium nitrite.

CASE III.—Nitroglycerin caused a fall of 30 mm., sodium nitrite a fall of 20 mm., and erythrol tetranitrate a fall of 15 mm.

C. H. Lawrence[10] in one case saw, after the employment of mannitol hexanitrate, a rise of pressure, which precipitated an attack of angina.

Vasotonin is a combination of yohimbin and urethane. The use of this preparation has been confined chiefly to Germany, and so far American observers have failed to obtain the uniformly favorable results reported abroad. If we are to believe foreign reports of the effect of this drug on man and animals, we should expect to witness a fall of from 20 to 40 mm. lasting from four to six hours; three or four injections given upon successive days should maintain the blood-pressure at a level lower than the original for six or seven days.

7 International Clinics, vol. i, 1912.
8 Brit. Med. Jour.
9 *Loc. cit.*
10 Boston Med. and Surg. Jour., November 2, 1911.

H. B. Arnold[11] reports the study of a small series of cases in which the effects of the drug were exactly the opposite. Injection of it was always followed by a rise in pressure, and was occasionally accompanied by more or less serious disturbances. In one case an attack of angina pectoris was brought on. The duration of the rise in blood-pressure averaged four to six hours. In the light of this dissenting evidence, slight as it is, the drug cannot be recommended, and if it is used at all its effects should be followed with great care.

Diuretin.—W. H. Hamberger,[12] following the lead of Romberg, Buch, and others, strongly advocates the use of theobromine preparations, particularly theobromine sodium salicylate or diuretin. He finds this drug particularly valuable in hypertension resulting from arteriosclerosis of the abdominal vessels, and reports his findings in a series of experiments upon animals. The table he gives so clearly shows the action of this drug that it is reproduced herewith:—

Gms. theobromine sodium salicylate per kg. of animal.	Effect on blood-pressure expressed in mm. of Hg.	
	Rise.	Fall.
0.0066	10 mm.	0
0.0125	0	0
0.022	0	22 mm.
0.040	0	30 mm.
0.062	0	36 mm.
0.066	0	42 mm.
0.125	0	65 mm.

The effect on the heart is not constant, as small amounts usually cause a moderate slowing of the rate, while large amounts generally accelerate the pulse rate and cause a marked lowering of blood-pressure. Hamberger does not consider his results conclusive, but, as the drug is apparently free from harm, it should be tried, particularly in cases of so-called "splanchnic sclerosis."

MIND CONTROL.*

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A MIND originally well trained, thoroughly poised, may, when disordered, be brought back to the norm by direct appeal, explanation, direction, and

11 Boston Med. and Surg. Jour., vol. clxv, No. 18.

12 Interstate Med. Jour., June, 1911.

* This communication is based on a review made by the author of a little book of one hundred and seventeen pages entitled, "Treatment of Neurasthenia by Teaching of Brain Control," by Dr. Roger Vittoz, of Lausanne, Switzerland; translated by H. B. Brooke: Longmans, Green and Company, London, New York, etc., 1911. Valuable assistance was afforded by reading an excellent manuscript on the subject by E. Raymond Bossange, of New York, who was under the care of Dr. Vittoz in 1910. The book itself lacks much of clearness and force; the phraseology is often confusing, and the method of presentation not nearly so convincing as the article by Mr. Bossange.

encouragement. Again, a mind fully alive to its own needs and unreservedly desirous of relief (though defective in balance) may be rehabilitated by reason, encouragement, and education.

The commoner problems arise in those who have had too little of original equipment, by nature or art, are lost in a maze of doubt, depression, and misinterpretation of their status. Hence it is well to apply to most cases elemental principles of training in control. Then will be revealed what is lacking and what is specifically needed.

An excellent method of systematically approaching the cure of a disorderly mind, whatsoever the cause or degree, is to employ the principle elaborated by Dr. Vittoz, of Lausanne, Switzerland. This consists of (*a*) making clear to the patient what mind control is, and why it is needed; (*b*) exercises to develop mind control, and (*c*) applying tests of progress by orderly demonstrations of advances made.

These exercises are original and effective; they may be used advantageously one or more times daily. Briefly, the patient is directed to compose himself; the mind is made receptive by the usual means for securing mental distraction, viz., by putting him into what Boris Sidis calls the *hypnoidal* state.

The essential feature of the method is that the patient is encouraged to make primitive efforts at becoming conscious of a part, and to conceive and execute simple movements or procedures. A consciousness of a part, *e.g.,* a hand, includes determining where it is; on what it is resting, or what rests on it, *e.g.,* a ring on the finger; the relation of fingers each to the other, whether shut, bent, or relaxed, etc. Then follow a few seconds of rest. The other hand is next brought into the field of consciousness and estimated; then the arms, feet, etc. Attention is gently directed in various ways by the operator and soon the sensory and motor reactions become more clear, intense, and controllable. The senses are then treated similarly, but more elaborately, *e.g.,* sight, hearing, and smell are educated,—always with definite intervals of rest.

As is well known, circulation is thus influenced, a greater afflux of blood to the peripheral parts being secured. A sense of tingling or warmth follows, and the temperature may be raised.

The mind should learn to recognize the genesis and progress of movement, as well as of sensation,—tingling, warmth, touch,—and gradually acquire increased power of orderly control.

Likewise ideation can be initiated and regulated. This leads to confidence in the recrudescence of facility, both motor and ideational; hence balance, poise, is attained. All the procedures of motor training thus contribute to a gain in symmetrical control from determination to execution, both conscious and unconscious. Primitive steps taken under direction should progress from the simpler to the more complex. This is true of the more familiar gross movements, as of the limbs, but it is even more useful to train the respiratory apparatus, which is equally educatable.[1]

[1] See paper by author on "Respiratory Education" in the Dietetic and Hygienic Gazette, Feb., 1909.

In respect to education Dr. Vittoz employs an excellent and original method for teaching concentration, by means of four exercises. A letter "I" (signifying the *ego*) is written large on a bit of paper. The word "I" is orally repeated; then the eyes are shut and the word repeated; also the concept, or *"eidos,"* of the word is recalled. Rests are taken between, as before. The exercise is repeated three times, the degree of concentration being gradually increased. Or, a piece of blank paper is used, and the *eidos* of the *ego* determined and assumed to be present. Another method is to concentrate the attention upon an enormous letter "I," then shut the eyes and reduce it gradually, step by step, till it is conceived of as of a normal size, meanwhile excluding all outside ideas.

The second exercise in concentration is to conceive of a figure 8 lying on a horizontal plane. Let the mind follow the curves of the figure deliberately and rhythmically; a sort of rocking movement is thus induced which is very tranquilizing and steadying. This may be lengthened inch by inch at each side along the horizontal line, till infinity is reached—or an adequate amount of time consumed. The speed may also be varied. This procedure is valuable for sleeplessness, to relieve tension. It is best performed with the eyes closed.

The third exercise in concentration is to imagine a figure or object to the left of a central spot and another to the right, equidistant. Dwell first upon the one a few seconds, then on the other. Then eliminate one and concentrate the mind on the other, making them appear and disappear; or, one may be conceived of as above and the other below.

The fourth exercise in concentration is to determine an idea, a sensation, or an entity, such as peace, force, energy, action, or any quality. Dwell on what it is, how it acts, how much one may enjoy or need it. This makes for autosuggestion, and can be elaborated to produce desirable effects.

Then come in normal sequence, in the process of primitive energizing and acquiring control, ideas of systematic distribution of volition. A command is given to perform an act, *e.g.,* to move a part; the patient is to think how it shall be done, then mentally make a movement through an arc, or simulate a more or less complex act. A series of impulses is thus involved, all mentally, with periods of relaxation and renewal. One is thereby led to definite determinations and reflections on the consequences, *e.g.,* "Shall I thrust out my arm?"—Yes or No. "Shall I rise from the chair?"—Yes or No.

Here we come to the educative value of customary acts performed either automatically or consciously. This is brought into play by such acts as walking, at first automatically and later by study of the genesis and phenomena of the movement. A notable difference is seen in the conscious or unconscious execution of such a complex act as that of walking. Performed automatically it is easy and graceful; with studied posturing it is constrained. Hence the whole realm of physical training to secure enhancement of efficiency from walking, running, or complicated acts such as dancing, etc., is compared. Most persons toward middle life perform motor acts well only when they are automatic. They become confused when an act is performed consciously and volitionally, and hence the need of special training. The neurasthenic, and

especially the psychasthenic, is hampered by doubts, limiting conditions, fancied inhibitions, fears, etc. Such subjects qualify their determinations by unconsciously saying, "Circumstances permitting, I will do so-and-so" when no real difficulty whatever exists. They also frequently use the phrase, "I should like to do thus and so," but do not do it, for a multitude of trivial or fancied reasons. Worse than all, they may have frequently attempted to perform an act, however simple, and have been checked by some counter-influence till the habit of surrender became fixed—an obsession.

When once these motor acts, or simple determinations, are well established, and controllable, a cure is well under way. Large need still remains, however, for progressive training. The will demands systematic and often protracted re-education. To eliminate overtension, worries, doubts, fears, etc., Dr. Vittoz uses the well-known device of blowing, exhaling the evil thought out and away; resting the mind afterward for several seconds; then repeating the blowing of the doubt away.

Finally, Dr. Vittoz uses a method of detecting the state of tension,—"vibration," as he calls it,—or the degree, quality, rhythm, etc., of the mental processes, by placing his hand on the forehead of the patient and learning through tactile sense. This is called by him "auscultation of the brain," and he likens it to auscultation of the lung. It is in reality palpation, and many highly sensitized specialists employ analogous methods of estimating the rise and fall of bodily and neural forces.[2]

Dr. Vittoz makes much of differentiating between physical and nervous fatigue, assuming that there is a difference, which, however, is doubtful. There are differences in the manifestations of fatigue, it is true. Especially are there wide differences in the degrees of fatigability. Here we enter the realm of the common ground of degrees and varieties of motor efficiency, of fatigability, of recoverability, of initiative, of capacity for sustained action or volition, of the untrained mind and body and the trained organism, of reaction times, volitional and automatic, etc. That which makes any concept effective is well known to be its motor element; without this it is incomplete.

A careful psychotherapeutist or motor therapeutist must study the application of all these principles for himself. The more thoroughly the simpler principles are grouped and graduated methods employed, with persistent, sustained enthusiasm in the progress of the work, the better the results.

A good plan is to have the patient perform simple exercises at definite intervals, *e.g.*, every hour, two hours, etc., and make an accurate report of successes or failures. Dr. Vittoz uses a chart on which is a horizontal line. Above this line are noted by a dot all active conditions; below, all passivities, wanderings, vacillations. On vertical lines are noted the hours of the day; thus the varying states can be plotted.

A clear distinction should be made between active or deliberate rest and passive or compulsory rest, as from dejection, doubts, vacillations, etc. Rest

[2] See paper "Psychic Hypertension: Restoration of Mind Control by Motor Training in Relaxation," by J. Madison Taylor, A.B., M.D., International Clinics, vol. ii, Series 22, July 1, 1912.

is often enhanced by exercises for relaxation. The mind is made practically independent of the body, or appears so. If external circumstances dominate the mind the patient is not a free agent, does not act and react, but is driven, drifts, is passive. Mental control is the best aid to physical repair. The less analytical the patient, the more concrete will be the benefit. The highly self-conscious, introspective, self-examining patient needs full explanations and exact reasons.

Cyclopedia of Current Literature

ASTHMA IN CHILDREN, MANAGEMENT OF.

A. *Treatment During Intervals.*—Each case should receive a thorough examination, in order to detect any abnormal physical condition, *e.g.,* of the nose and throat. The diet and mode of eating should be looked into and an examination of the urine and blood made. The history of the child and family should always be obtained, as in this way valuable hints as to treatment are usually ascertained. All the obtainable facts having been gathered, an outline of treatment, including diet, habits, etc., should be specifically given to the mother. As to clothing, the author would simply urge that the feet and legs be always kept warm and dry, and the chest and neck properly protected to prevent catching cold. As to diet, a low meat diet with high vegetable proteid is generally ordered. In cases of asthma induced by intestinal trouble, the diet should contain green vegetables and fruit juices.

Since in the majority of cases the paroxysm is induced by an acute attack of bronchitis, it is important that the mother always take prompt measures for relief upon the first symptom of a cold, as sneezing or coughing. The child should be put promptly to bed, have the diet restricted to liquid foods, and given an active cathartic. Medication will vary naturally in different cases, but hot drinks are always indicated.

Certain cases fail to respond, and in these a change of climate is necessary. In 2 of the author's cases a change for one winter was sufficient. In some a change in location of only a few miles has been enough to prevent the attacks. Where there is simple anemia, and in cases with a history of rheumatism, either in child or parents, appropriate treatment should be given. The writer firmly believes in pulmonary gymnastics for asthmatic children. The mother is instructed to give daily exercises in deep breathing, with special emphasis upon complete expiration. This is particularly valuable where there is vesicular emphysema as a result of the asthma. An elastic binder, worn around the chest and held in place with shoulder straps, is strongly recommended. The binder should be tight enough to exert a constant slight pressure, which aids in expiration.

In the many cases in which a catarrhal bronchitis persists after cessation of the acute paroxysms, the writer has found decided benefit from the use of sodium iodide, given in doses of 2 to 4 grains (0.13 to 0.25 Gm.) three times daily after meals in essence of pepsin. It should be continued several weeks. Other cases with cough, but without the nervous element, are greatly benefited by

syrup of hydriodic acid, in doses of 10 to 20 minims (0.6 to 0.12 c.c.).

B. *Treatment of Paroxysms.*—The room should be warm. Air currents are to be avoided; ventilation may be had from an adjoining room rather than from open windows in the same room.

If the bowels are distended with gas, this should be relieved promptly by a warm enema. If the paroxysm occurs soon after a hearty meal, an emetic will give relief.

As for specific remedies, one drug will not relieve all cases. Epinephrin solution hypodermically gave prompt relief in 2 of the author's patients, but in others utterly failed. The dose for infants is from 3 to 5 minims (0.2 to 0.3 c.c.) of the 1:1000 solution. Other cases were relieved, respectively, by $\frac{1}{30}$ grain (0.002 Gm.) of morphine sulphate, 3-grain (0.2 Gm.) doses of chloral hydrate, and inhalations of extemporaneously prepared (nascent) oxygen.

In cases where after the severity of the paroxysm is relieved there remains a cough, with more or less wheezing and dyspnea on exertion, the use of heroine in a syrup of hypophosphites will often benefit. Sometimes where cough disturbs sleep, a single dose of antipyrin given at bedtime will allay it and induce quiet rest. Where there is a dry, teasing cough, inhalation treatment by the use of a croup kettle is of advantage. One teaspoonful of a combination of creosote and oil of eucalyptus may be added to a pint of water, and the mixture inhaled with an improvised croup tent for one-half hour at a time, two or three times in the twenty-four hours. This will often soften the cough and induce expectoration. Inhalations of lime-water are also useful. Until the cough has been relieved these children should receive much general care, including a restricted diet, attention to elimination, regulation of the temperature and ventilation of the room, and proper covering on going outdoors. H. M. McClanahan (American Journal of the Medical Sciences, June, 1912).

CARCINOMA OF SKIN, EFFECT OF ADRENIN IN.

The author reports a case of skin carcinoma in a man 63 years of age, in which the local use of a 1:1000 solution of the active principle of the suprarenal appeared to exert a marked influence in causing retrogression and final disappearance of the growth. The solution was either painted freely over the tumor surface or a few drops of it injected into the tumor; the injections were followed by edema of the tissues, and were therefore given only on a few occasions. Radium treatment, previously given for some time, had had but little effect. Adrenin was then added, and from the start distinct benefit was noted, the ulcerated area steadily diminishing in size. A wet dressing of lint soaked in the adrenin solution was applied each day. When the adrenin was temporarily stopped, the radium being continued, there was shown a tendency to relapse. The radium was then stopped and the adrenin used alone, at which period the process of healing appeared to be most rapid. Finally, the ulcer was completely covered over, a smooth, hardly visible scar being left. Six years have elapsed since the disappearance of the growth, without any indication of recurrence.

The healing of the ulcer at its margin had apparently been initiated by the adrenin. Its mode of action was obscure. It might have diminished the vitality of the tumor cells by inducing anemia locally, but such an influence would have lasted only a short time. In

the process of healing there was no necrosis of the tumor mass, leaving a cavity to be filled up by granulation, but apparently a gradual replacement of the tumor at its periphery by healthy new tissue. L. C. Peel Ritchie (Lancet, June 29, 1912).

GASTRIC HYPERSECRETION, TREATMENT OF.

The use of a salt-poor diet consisting chiefly of albumins and fats is recommended by the author in the treatment of this symptom. Cream should be taken, but not milk, which, though salt-poor, leads to the production of curdy masses and fatty acids in the stomach, irritating the mucosa mechanically and chemically. Meat should be employed only after it has been softened by hanging for five days to a week, and then well pounded. The statement often made that white meat is preferable to red meat has no foundation in fact. Raw eggs deserve to be freely taken because of their property of neutralizing acids. Whenever heartburn appears, therefore, one or two raw eggs should be swallowed; this measure is to be preferred to the taking of sodium bicarbonate in water. Soft-boiled eggs are not so well borne, notwithstanding the fact that they are generally considered a light article of food. Cheese, which is wrongly considered difficult of digestion, is especially recommendable in its lighter forms and when salt-poor (unsalted gervais, cream cheeses, cottage cheese). Foods made from flour should be restricted as much as possible; they not only strongly excite the flow of hydrochloric acid, but lack, in contradistinction to meat and eggs, the property of neutralizing free acid. They should therefore only be taken in conjunction with eggs and with a large amount of unsalted butter and rich cream. While the eggs saturate the acid directly, the fats have the property of causing a backflow of alkaline pancreatic and intestinal juices which further contribute to the neutralization. Vegetables must be scalded two or three times with water and the latter then thoroughly poured off, in order to eliminate the constituent substances which stimulate the flow of gastric juice. Alcohol is a powerful stimulant to the gastric secretion.

Medicinally, hyperacidity resulting from vagus excitation should be combated with extract of belladonna:—

℞ Ext. belladonnæ fol., 0.4-0.6 Gm. (6½-10 grains).
Pulv. rad. et ext. valerianæ, of each, 2 Gm. (30 grains).

Ft. in pil. no. xxx.
Sig.: One pill three times daily after meals.

The overexcited mucous membrane should receive direct treatment by means of some astringent remedy taken in a glassful of lukewarm water half an hour before meals. To very nervous persons there should be administered in addition 3 to 4 Gm. (45 to 60 grains) of a bromide, which will also reduce the amount of secretion. The bromide should be continued for from four to six weeks.

Four or five meals should be taken daily, unless gastric atony or a necessity for increasing the body weight should require the taking of smaller meals at shorter intervals. R. Ehrmann (Berliner klinische Wochenschrift, March 11, 1912).

HEMORRHOIDS, TREATMENT OF.

The following preparations are strongly recommended by the writer, who found them efficient in practically every case in which they were employed:—

℞ Pulveris gallæ,
Zinci oxidi, of each, ʒj (4).
Hydrargyri chloridi mitis, ʒss (2).
Bismuthi subnitratis, ʒj (4).
Cocainæ hydrochloridi, gr. v (0.3).
Unguenti aquæ rosæ, ℥j (30).
M. Ft. ung.

℞ Pulveris gallæ,
Zinci oxidi, of each, gr. v (0.3).
Morphinæ sulphatis, gr. ¼ (0.015).
Cocainæ hydrochloridi, gr. j (0.06).
Atropinæ sulphatis, gr. 1/60 (0.001).
Olei theobromatis, gr. xxv (1.6).
M. Ft. suppos. no. j. Da tales no. xxiv.

In external piles the ointment is used, well smeared in within and around the anus, and protected with a piece of cotton partially inserted therein. In internal piles the suppositories are used. Sometimes both are required. The suppositories are used once or twice, the ointment three times, a day. The anus should, of course, be kept thoroughly clean, and constipation avoided. Injections of 4 to 6 ounces of cold water within the rectum several times a day materially aid the treatment. W. J. Robinson (New York Medical Journal, July 6, 1912).

PERITONITIS, PNEUMOCOCCAL, IN CHILDREN.

Pneumococcal peritonitis occurs with sufficient frequency to make it a factor of real importance in the differential diagnosis of acute abdominal conditions in the child, and since the onset may anticipate or be independent of any pulmonary lesion the problem of diagnosis is still further complicated. In a series of 27 laparotomies for acute abdominal inflammatory conditions in children under the age of 12, the author met with 3 cases of pneumococcal peritonitis. His paper is based on 28 cases observed at the General Hospital, Birmingham.

The incidence of pneumococcal peritonitis is greater in female than in male children—23 to 5 in the author's series. In 19 cases one or both lungs were affected, with or without the pleuræ, and in 3 more instances the pleuræ were alone infected. The lungs would seem to be the focus from which the septicemia and peritoneal invasion results, but other pneumococcic foci may also light up a peritonitis; thus in 1 case in which pneumonia had been followed by empyema, there developed nine weeks after the onset of pneumonia a pneumococcic peritonitis which rapidly proved fatal. Bowen and Arnaud, among 30 cases in which the infection was secondary to some pneumococcic lesion, found the primary source in the lungs in 22, the other 8 cases being accounted for as follows: Otitis media, 3; umbilical abscess, 1; intramuscular abscess, 2; sore throat, 2. In a certain proportion of cases the peritoneum alone is attacked, no lesion being present in the lungs or elsewhere. The organism in these cases would appear to have entered the circulation directly from some of the sites where it is normally found, a temporary increase of virulence or of lowered resistance on the part of the patient having permitted this invasion to take place even without the presence of any macroscopic lesion.

Three different clinical types may be recognized in the onset of a pneumococcal peritonitis. In the first place there are very acute cases presenting marked abdominal features from the first but no other pneumococcal lesion. Seven out of the 28 belonged to this class, and of them 4 recovered, while 3 died. In another class are the cases which develop a pneumonia simultaneously, or almost so, with the onset of peritonitis. Fourteen belonged to this type, and of them only 1 recovered. In the third category are those cases in

which the septicemia is of a more chronic type. Often pneumonia has been present some weeks previously; after this collections of pneumococcic pus have appeared in one or other pleural cavity or the peritoneum. The infection has lost much of its virulence, but the patient is weakened by the long illness and often succumbs eventually to the peritonitis. Of 7 cases belonging to this class only 1 recovered.

Diagnosis is readily made in the cases presenting the typical abdominal symptoms—pain, vomiting, diarrhea (not infrequently followed by constipation), tenderness, rigidity, signs of intraperitoneal effusion, fever, leucocytosis, etc.—when a pneumococcal lesion is found elsewhere in the body. But in some cases the first, and sometimes the only symptoms, are abdominal, and in these the onset is most likely to be confused with an acute appendicitis. In not a few cases differentiation is impossible, but the early rigidity and tenderness are suspicious signs, and if these are accompanied by initial diarrhea, there is a strong suspicion that the case is one of pneumococcal peritonitis. Pain tends usually in appendicitis to become localized around the appendix. Pneumonia in children may present abdominal symptoms without any peritoneal involvement, but in such cases rigidity, tenderness and pain are chiefly in the upper abdomen, and of short duration only.

The subacute cases that go on to abscess formation may be mistaken for typhoid fever or tuberculous peritonitis. The negative Widal reaction and leucocytosis assist, however, in differentiation from the former, while in tuberculous peritonitis the constitutional symptoms are usually less severe, the leucocyte count differs, and wasting is generally less rapid.

As regards treatment, since in pneumococcal peritonitis the condition is septicemic from the first, incision and drainage, however early performed, will fail to relieve in many cases. Nevertheless, free drainage of all collections of pus, whether in the pleuræ or peritoneum, will aid the defensive powers of the body against the infection. The earlier this is done the better. In the 18 cases operated on in the author's series all but 2 had had marked abdominal symptoms for more than forty-eight hours before operation. One of the early cases recovered, in spite of having a right-sided pneumonia and empyema as well as peritonitis. The impossibility of distinguishing some of the cases from acute appendicitis further increases the necessity for early operation. Incisions should be made in both flanks and in the middle line above the pubes, tubes being placed in the pelvis and loins. No wiping or irrigation, but the operation carried out as speedily as possible and the patient put back to bed in the Fowler position. Saline solution should be given freely, preferably by continuous proctoclysis, or by enemata or intravenously. Nothing but a little water should be given by mouth, and aperients withheld until some days after operation.

Treatment by vaccines has not proven generally successful, firstly because the infection is sometimes so overwhelming that all resistance is paralyzed, and secondly, because of the many different strains of pneumococcus which will often render a stock vaccine useless, while the making of an autogenous vaccine requires time. In the chronic cases, however, with residual abscesses in the pleura, peritoneum or elsewhere, the use of autogenous vaccines has been attended

with considerable success, and should be practised as a routine measure. Seymour Barling (Practitioner, April, 1912).

POSTANESTHETIC VOMITING, PREVENTION OF.

The author advocates the use of chloretone for this purpose. He administers 15 grains (1 Gm.) of the drug in a capsule, one and a half hours before operating. The advantages claimed for the use of chloretone are: 1. It lessens the patient's dread. 2. The anesthetic is taken more quietly. 3. Less anesthetic is required. 4. The patient comes out from anesthesia quietly. Healing by first intention is thus facilitated; ligatures are less likely to slip, and bandages remain undisturbed. 5. Shock is reduced to a marked degree. 6. Nourishment can be taken freely as soon as the patient becomes fully conscious. 7. In operating in private houses less nursing is required, and the nurse can clean up the scene of the operation while the patient is calmly resting.

The only drawback which has been observed is that the drug may cause slight dizziness before the operation. If ether has been administered there may be some ejection of mucus directly after the operation, but there is no vomiting. L. W. Biekle (Therapeutic Gazette, March, 1912).

PRESSURE INUNCTION IN OPHTHALMIC CONDITIONS.

By the term "pressure inunction" the author designates a form of treatment involving mercurial inunction combined with more or less continuous pressure, and found useful by him in chronic hyperplastic conditions of the cornea, sclera and vitreous body.

The ointment used consists of 30 grains (2 Gm.) of calomel in 1 ounce (32 Gm.) of petrolatum. It should be rubbed up very carefully so that no particles remain undivided. It is applied freely to the closed eyelids; in cases of corneal opacity the conjunctival sac should be filled also. A pad of absorbent cotton is placed over it, and 3 or 4 turns of a good elastic flannel bandage then applied rather tightly. This dressing is used from two to three hours daily.

The cases most benefited by this treatment are those of corneal opacities of a dense type, interstitial deposit, plastic deposit on the lens from iritis, opacities of the vitreous, and some obstinate cases of scleritis. The improvement is slow and the treatment must be persisted in for some months, but results which could not be hoped for under other methods were obtained by the author through its use. Mercurialization never resulted from the treatment. Some persons were found to bear a stronger ointment than the standard one, while in others the latter caused too much irritation and had to be weakened or intermitted. G. Sterling Ryerson (Canada Lancet, June, 1912).

PROLAPSUS UTERI, OPERATION FOR.

The problem presented in prolapsus uteri is, according to the author, to shorten the elongated lower uterine segment and the elongated cardinal ligaments of the uterus, to insure an anterior position of the latter, and to restore the anterior and posterior vaginal walls and the subjacent structures *ad integram*. These several indications he meets by adopting the following operative technique:—

The cervix is seized with double tenacula in each lip, and the uterus pulled as far out of the body as it will come. A longitudinal incision is made

in the anterior vaginal wall in its whole length and a circular incision around the cervix. The anterior wall is dissected free from the bladder and the utero-vesical ligament cut. The cervix is amputated above the internal os; the cervical canal is then dilated and the uterus curetted.

The lateral and posterior sutures for an amputated cervix are next inserted but not tied. Then a curved needle threaded with No. 3 chromicized catgut (40-day) is passed with the point turned downward through the base of the left broad ligament, then transversely through the anterior wall of the corpus uteri as high as possible without opening the peritoneum, then through the base of the right broad ligament, again with the needle point down. By making this ligature tense and pushing the detached bladder up, the laterally dislocated edges of the fascia are plainly marked; they are brought together in the middle line by figure-of-eight sutures of catgut No. 3, the needle always being inserted from above downward to avoid the ureters. These sutures are usually three or four in number. When they are tied, the orifice through which the bladder prolapsed is firmly closed. The redundant vaginal wall is cut off. The anterior sutures for an amputated cervix are tied. A few transverse sutures unite the anterior vaginal wall over the sutures joining the pelvic fascia.

The posterior vaginal wall and the pelvic floor are strengthened by an extensive Hegar operation as follows: A fold of mucous membrane in the middle line just below the cervix is seized by a hemostat. Two Allis intestinal forceps are fastened to the labia majora a trifle above the original level of the posterior commissure of the vulva. By pulling the center of the posterior vaginal wall to one side with tissue forceps, it is possible to draw a straight line with a knife from the hemostat to one Allis forceps. The same is done on the other side. The triangle thus marked is partly stripped, partly dissected off. The upper part of the triangle is closed by a double-tier catgut suture, the middle portion by transverse deeply inserted vaginal sutures of silkworm-gut, shotted to facilitate their removal. The perineal body and the lower third of the triangle are united by transverse silkworm-gut perineal sutures, knotted on the external skin surface of the perineum.

Of several hundred patients with partial or complete uterine prolapse and partial or complete inversion of the vagina in whom this operation has been performed in the last ten years, not one has returned on account of recurrence. B. C. Hirst (Journal of the American Medical Association, March 23, 1912).

PSORIASIS AND LICHEN PLANUS, TREATMENT OF.

The use of the following emulsion of tar is advocated by the authors in psoriasis: Oil of cade, 50 Gm. (1½ ounces); black soap, 25 Gm. (6 drams); water, 50 Gm. (1½ ounces). Yolk of egg and a little fluidextract of quillaja may with advantage be added to improve the emulsion. This preparation is added to the baths given for the removal of the scales. The patient is ordered to soak in the bath and rub the patches for ten or fifteen minutes.

All emulsions of tar, according to the experience of the authors, are more active than ordinary tar baths. A great advantage of the tar emulsion baths is that they are non-irritating. They should be administered daily. A small amount, such as 2 Gm. (30 grains), of chrysarobin may be added to the prepara-

tion, its effects being rendered somewhat milder by the tar. The patient is directed to apply petrolatum to the patches in the daytime, then take the bath, and reapply petrolatum at night. Any redness following the treatment indicates that the bath should be made weaker. Tar folliculitis is treated by the application of methylene blue. Occasionally pyrogallol to the amount of 1 or 2 Gm. (15 or 30 grains) was added to the baths, the urine being carefully watched as a precautionary measure.

In 8 cases recently treated with the oily tar emulsion baths the itching was observed promptly to subside, and the skin was left smooth and supple. In a severe case of lichen planus, associated with the development of bullæ, the baths also gave excellent results. Balzer, Godlewski, and Condat (Bulletin de la Société Française de Dermatologie et de Syphiligraphie, February, 1912).

PULMONARY AND HEPATIC ABSCESS, TREATMENT OF.

The case is reported of a boy of 14 who had coughed up pus night and day for five years, the amount evacuated in the twenty-four hours averaging about a teacupful. He was stunted in growth, and the parents had given up hope of cure. From the character of the pus, the practically aseptic condition and the physical signs, the author diagnosed liver abscess with perforation of the diaphragm and pleura and secondary abscess in the base of the lung, with adhesion of lung, liver and pleura to the diaphragm in the neighborhood of the perforation, and with intermittent partial evacuation of the cavities in the liver and lung *via* the bronchi and trachea.

There being little hope of healing under these conditions, the force of gravity preventing complete evacuation of so complicated a cavity at such a hydrostatic depth by the simple act of coughing, the author began treatment by inverting the patient, when at once a quantity of pus was evacuated greater by far than had been previously removed by any one spasm of coughing. Thereafter the treatment consisted in having the boy hang over the edge of a table, head down, the body being suspended vertically while the legs and thighs lay on the table at right angles to the trunk, thus supporting him. In this position he was made to cough and squeeze his chest until no more pus came out. By this means the abscess cavity was completely emptied, and he was made to repeat the process 5 or 6 times a day. The amount of pus evacuated rapidly diminished, and in about six weeks the boy ceased to bring up and was cured. Subsequent progress, mental as well as physical, was remarkable.

It is therefore suggested that this postural method of treatment be tried in abscess of the lung and bronchiectasis before resorting to surgical procedures. W. E. McKechnie (Lancet, March 30, 1912).

PULMONARY TUBERCULOSIS, TUBERCULIN IN.

From his experience in the last six years, covering several hundred cases, the author is led to form the impression that the careful use of tuberculin gives valuable results in pulmonary tuberculosis. Its use is not attended with dramatic effect except in occasional examples of febrile disease or laryngeal tuberculosis, nor does its use tend to hasten the apparent arrest of the disease or shorten the length of treatment required, except in certain instances in which the patient is just holding his own, but making no real progress. On

the other hand, tuberculin, in conjunction with ordinary methods, will lead to the disappearance of tubercle bacilli from the sputum in a larger proportion of cases than ordinary methods alone, and according to the author's experience diminishes the number of relapses, *i.e.*, establishes a higher degree of immunity. He agrees with those who hold that the best treatment for pulmonary tuberculosis is tuberculin in conjunction with "sanatorium treatment," either at a special institution—as is necessary in many cases—or at home.

The author believes it important to employ tuberculins recently prepared, for the sake of uniformity in results.

Regarding the classes of cases in which tuberculin therapy is suitable, the author states that the ideal cases for it are those of recent origin with little constitutional disturbance, chronic afebrile cases,—*i.e.*, those in which walking to the extent of a few miles produces no febrile reaction, —and in those which do not progress in spite of sanatorium treatment. In cases in which there is more or less constant autoinoculation, *e.g.*, cases where frequent attacks of prolonged coughing or other symptoms produce a series of autoinoculations which are beyond our control, tuberculin is likely to do harm. Sometimes, however, the cause of these autoinoculations may be controlled, as cough by the use of sedatives, active laryngeal tuberculosis by vocal rest, frequent vomiting by appropriate remedies, or the lung condition itself by means of "artificial pneumothorax," in which case tuberculin may be used and will often, in the author's opinion, greatly improve the chances of recovery. Wherever there is definite caseation and breaking down of tissue, tuberculin will accentuate the intoxication if there is no outlet to the necrosed products; in some cases this is of value, as it leads to rapid destruction of a localized area with cavity formation and subsequent healing.

In chronic afebrile cases the author prefers to begin with a minimal dose of tuberculin, such as $\frac{1}{50000}$ mg. T. R. or B. E. An increase of dose may then be made at intervals of forty-eight to seventy-two hours. Experience enables one to see very soon whether a case is one in which rapid increase is safe or where one must proceed slowly. If time is an important factor, however, one can attempt to differentiate the more sensitive cases by ascertaining whether autoinoculation is readily produced on exertion, or noting the ease of reaction to a von Pirquet test. With regard to the energy with which the treatment is to be carried out, the author believes that it is best to avoid causing a general reaction, as this sometimes lasts for days or even weeks and renders further treatment difficult or impossible by enhancing the patient's sensibility. Such a reaction can readily be avoided by heeding the preliminary warnings that the dosage is becoming excessive, viz., malaise, headache across the eyes, excessive focal reaction, shown by an undue increase of crepitations over the diseased area and an undue increase of expectoration, and a definite effect on the temperature. On the other hand, an ineffective dose is one which produces no focal reaction and has no effect upon the temperature, and consequently the next dose may be safely increased in size and given at a short interval. As for the final dose to be aimed at, the author favors large amounts, such as 20 mg. or more of B. E., or 1 c.c. of T. R. These are, of course, not always attainable, as in a number of cases doses such as $\frac{1}{100}$ mg. (0.002 c.c.) will always produce a general reaction. In febrile cases, the principles of treatment are the same, ex-

cept that greater care must be taken to prevent autoinoculation and certainly to avoid a general reaction.

Treatment in all cases should be prolonged—not less than eight months, and preferably one year. In cases with more or less constitutional disturbance and ready autoinoculation the duration may be eighteen months or even more. Arthur Latham (Lancet, April 27, 1912).

SALVARSAN, RECTAL USE OF.

In view of the contraindications to the intravenous administration of salvarsan and the difficulties presented by this method of introduction, the author has attempted to give the drug by rectum, chiefly in the form of suppositories. Oil emulsions of salvarsan were at first used, but it was soon found suppositories of cocoa butter containing 0.1 Gm. of the drug were more satisfactory. A suppository is introduced at 5 or 6 P.M., and by the next morning it will be found to have been completely absorbed. Slight local irritation may be produced, but this disappears in two or three hours. It can, moreover, be prevented by the addition of a small amount of cocaine to the suppository. A constitutional reaction appears after two or three days, manifested by nausea, lassitude and temperature elevation. That the absorption of the remedy is complete is shown by the fact that it is not recoverable from the stools.

To adults 0.6 Gm. altogether is administered, one suppository being given every week for six weeks. The author considers the method useful as a substitute for intravenous or subcutaneous injections in cachectic cases or those presenting cardiovascular lesions. S. L. Bagrow (Semaine médicale, January 17, 1912).

SEASICKNESS, PROPHYLAXIS AND CURATIVE TREATMENT OF.

Prophylaxis.—The bowels should be brought into proper activity before sailing, if necessary by evacuant pills or fluids. Cold water should be taken before meals only. It has been suggested that one eat often and but little at a time, and that one should regularly eat something, preferably apples or oranges, before rising. As for the diet, the following list may be suggested: chips of dried beef, dried fish, crackers, fresh acid fruits, almonds, filberts, broths and pastries. Butter, sugar and milk should be avoided. It has been found beneficial to lie down for about fifteen minutes immediately after eating.

Among the drugs recently recommended for prophylactic purposes are: Veronal-sodium, in 5-grain (0.3 Gm.) doses in tablet form by mouth, or, in cases where the stomach does not bear it well, in suppository form in a 7½-grain (0.5 Gm.) dose. The bromides of sodium and potassium, now somewhat falling into disuse. Chloretone, taken in 5-grain (0.3 Gm.) capsules every three hours for 3 doses, so arranged that the last shall be taken on going on board. For short voyages this will generally insure complete immunity; for longer ones, more doses would be necessary. Validol, taken two or three hours before sailing; one dose every hour until nausea has entirely disappeared. It is best given in liquid form on a lump of sugar, the first dose consisting of 30 drops, the second of 25 and the third of 15 drops.

Curative Treatment.—Tousey recommends 2 teaspoonfuls of peptones in sherry wine poured over cracked ice, to be given every half hour. Among German remedies, one containing thymol bismuth and sodium bicarbonate has

recently been used with fair success. The use of the spinal ice-bag has been recommended, but has the disadvantage of confining the patient to the stateroom.

If the patient is very sick and cannot eat or retain food, he will be able to take an eggnog prepared by mixing the yolk of 2 raw eggs with an equal volume of good brandy or sherry and beating well together. This may be given in teaspoonful doses at ten-minute intervals; or, a pint of beer, ale, or porter may be taken in 6 or 8 doses at ten-minute intervals. Champagne frappé or ginger ale, with 20 per cent. of brandy or whisky, are excellent, and beef-tea or meat broths in tablespoonful doses may be retained. Champagne is best given after its effervescence is spent; otherwise, it is apt to cause eructations.

If laxatives do not move the bowels an enema of warm water should be taken on alternate days.

The drugs now most highly recommended are veronal, validol, methyl valerianate, chloretone, and amyl nitrite. Veronal is best given in a suppository, as it is with difficulty retained by mouth. Validol may be given on sugar, as already described; but in some cases the sugar produces nausea, and the drug may then be given in a weak alcoholic solution in 10- to 15- minim doses, repeated hourly if required; or, the same number of minims may be given in water or wine every three hours. Chloretone may be given in tablets, powders or gelatin capsules; the last-named form is said to have given the best results. One writer has reported headache, malaise and offensive taste as being noted after the taking of chloretone. Amyl nitrite has been used successfully in full doses. Morphine, paregoric or cocaine should not be given. W. A. Boyd (Dietetic and Hygienic Gazette, June, 1912).

TUBERCULOSIS OF THE MESENTERIC GLANDS IN CHILDREN.

From observation of a large number of abdominal sections in children the author has been forced to the conclusion that tuberculous mesenteric glands are to be found in practically every child submitted to operation. Since it has been proved that micro-organisms are a hundred- or a thousand-fold more numerous in the cecum than in any other part of the alimentary tract, the author thinks there can be no mistake in assuming that the great entrance of tuberculosis from the intestine to the body is by the lymphatics of the ileocecal region and that, therefore, tuberculosis of the mesenteric glands originates from there. Though there is a considerable risk of the generalization of tuberculosis from the infected glands, in this situation the disease is not necessarily fatal. The children suffer from chronic ill-health, and from abdominal pains referred to the umbilical region, coming on at night and sometimes after food. The loss of appetite is often accompanied by disturbed bowel action, generally constipation. After a considerable experience in operating upon children presenting symptoms of this character the author states there are always found in these cases not only tuberculous mesenteric glands but also a somewhat dilated appendix, containing fecal material but otherwise not diseased. He accordingly removes the appendix in these patients, thereby obviating a great danger and source of discomfort from contractions on the fecal matter (appendicular colic). A fortnight or three weeks after operation the patient is sent away to a country home. In 9 cases out of 10 improvement is rapid and great. Shortly after the operation the appetite returns and the patient eats and digests with enjoy-

ment articles of diet previously interdicted.

Concerning the nature of the infection in the tuberculous mesenteric glands the author is in doubt. Von Pirquet's test for bovine and human tuberculosis is usually negative, and from its varying results he is led to conclude that some of the infections are due to human tuberculosis, some to bovine tuberculosis, and some to both. The clinical indications in children with indigestions, abdominal pains and discomfort and perhaps colitis are, however, clear: Remove the appendix and begin sanatorium treatment a fortnight later. Edred M. Corner (Lancet, February 17, 1912).

URETHANE, USES OF, IN CHILDREN.

Upon trial of urethane (ethyl carbamate) in 50 cases in children the author has come to the conclusion that this drug is a reliable, harmless hypnotic which deserves to be employed in all conditions associated with nocturnal excitement in the young. In children 1 to 12 months old he finds doses of 0.5 to 1 Gm. (7½ to 15 grains) to be suitable; in children 1 to 2 years old the dose should be 2 Gm. (30 grains). Urethane readily dissolves in water, and can be given either by mouth or rectum without irritating the mucous membranes. Quiet sleep supervenes in ten to twenty minutes and lasts in most instances through the whole night. The pulse and respiration remain unchanged, and no untoward collateral effects were ever observed by the author. Occasionally children who were underweight were observed to require even larger doses than those corresponding to their age.

The drug was found by the author effective in various conditions associated with nervous excitement, in pain due to injuries or disease, and in infantile convulsions the result of gastrointestinal or cerebral disturbances. In doses of 2 to 3 Gm. by mouth or rectum, urethane was found valuable as a substitute for chloral hydrate. In whooping-cough it was not observed to exert any influence upon the frequency and violence of the coughing spells, but proved valuable as a preventive of the nervous phenomena which appear after whooping-cough has run its course. Favorable results were also noted with the drug in latent or manifest spasmophilia, in chorea, and in postpneumonic delirium. F. Bertling (Berliner klinische Wochenschrift, January 22, 1912).

VOMITING OF PREGNANCY, NEW SIGN IN.

The author found in 4 successive cases of the vomiting of pregnancy that the addition of a solution of ferric chloride to the patient's urine caused it to develop a port-wine color. This is the identical reaction commonly tested for in diabetic cases to determine the presence of beta-oxybutyric acid in the urine, and is generally known as Gerhardt's test. This reaction is not given by the urine either in normal pregnancy or in eclampsia. The intensity of the red color produced varies directly with the gravity of the condition, and the reaction is lost when the gastrointestinal functions return to normal. The test may be obscured by the formation of a precipitate of ferric hydroxide, but this confusing factor can be eliminated by filtering. Lead acetate, if perchance it is being employed, will also mask the reaction, combining with the iron salt to form a red compound. Lorier (C.-r. de la Société de Biologie, March 16, 1912).

Clinical Summary

Practical hints from articles and abstracts that have appeared in the Monthly Cyclopedia and Medical Bulletin during the current year.

Acne. TREATMENT. Vaccines useful for selected cases: (1) Cases with deep-seated pustules, occupying a large area; micro-organisms abundant, staphylococcus greatly predominating. Autogenous staphylococcic vaccine most efficient, but must be administered over some months. (2) Cases with lesions indolent and superficial, chiefly inflamed comedones, with but little pustulation. Stock acne bacillus vaccine here gives good results in many instances. Administer 5 to 10 millions acne bacilli every week or ten days. (3) Cases combining the more and less severe lesions of the first and second groups. Use mixed vaccines of staphylococcus and acne bacillus. Other measures: Remove other etiological factors, such as reflex circulatory disturbance due to nervous strain in adolescence and digestive disorders. Correct constipation and regulate diet and mode of life. Locally, squeeze out comedones and wash often and vigorously with soap and water; if suppuration present, puncture or incise pustules, bathe with hot water, and dress antiseptically; disinfect skin and have garment worn next to affected part frequently changed; X-rays; radium for indurated nodules. *Morris and Dore.* Page 93

Vaccines used in about 50 cases. Some received staphylococcic vaccine alone, others autogenous vaccine, and remainder a polyvalent stock vaccine made from previous cases. Injections of 3 to 5 million acne bacilli and 150 to 250 million staphylococci given about every five days. All patients showed marked improvement, irrespective of whether stock or autogenous vaccine used. Old vaccine emulsions found to produce more rapid immunity, with less danger of local reaction or anaphylaxis than those freshly prepared. Constitutional treatment: Correction of any digestive disturbance and regulation of bowels. Locally, mild antiseptic lotion applied. *Lovejoy.* 415

Acne Rosacea. TREATMENT. Where acne indurata associated, incise papules and pustules, scarify distended nasal capillaries, and apply Bier's cup for some time to individual lesions. Have patient apply hot compresses freely to face and at night following ointment: Salicylic acid, 0.6 (gr. x); precipitated sulphur, 4.0 (℥j); white petrolatum, 30.0 (℥j). *Aronstam.* 176

Adenitis, Tuberculous. TREATMENT. Röntgen rays recommended for routine use in cases that do not readily respond to medical treatment. Give ten daily irradiations, then 2 or 3 times a week. Study of proper dosage in each case necessary. Patients thus treated early can be cured without breaking down of a single gland. Where such breaking down does occur, incise, swab out cavity with equal parts of iodine and phenol, and drain. *Boggs.* 229

Albuminuria, Orthostatic. DIAGNOSIS. Euglobin or nucleoproteid reaction of urine useful for differentiation of "harmless" orthostatic or adolescent albuminurias from that of organic renal disease. Test performed thus: Dilute 3 to 5 c.c. of urine with 4 to 5 times its volume of cold distilled water and add 2 to 3 c.c. of 50 per cent. acetic acid. Where test positive, a diffuse cloudiness appears, which becomes more intense on standing; this shows the albuminuria to be harmless. *Elliott.* 365

Anal Fissure. TREATMENT. Where merely a shallow, red, linear tear: (1) At first visit, cocainize fissure and dilate sphincters gently with fingers; lightly curette any unhealthy granulations present. (2) Regulate bowels by correcting diet, nightly injections of olive oil and, if necessary, cascara or compound licorice powder. (3) Anus to be bathed night and morning with warm water, and a sterile gauze dressing smeared with calomel or boric acid ointment—or, if pain very severe, cocaine or morphine (gr. v-x to ℥j)—applied. (4) At 4- or 5- day intervals, cocainize ulcer, stretch sphincters moderately, and apply ichthyol and glycerin, 15 per cent., or balsam of Peru, 20 per cent. in castor oil, upon cotton, to remain for several hours. Tuttle recommends application of pure ichthyol to fissure 2 or 3 times a week. In many cases not amenable to above palliative treatment excision is applicable: Infiltrate under and around fissure with 0.1 per cent. cocaine, seize small fold of skin at its lower angle, and excise ulcer with tissue forceps well up into anal canal. Where but moderate hypertrophy of sphincters, especially in children and the elderly, dilatation is the method of choice; some cases recur. Where marked sphincteric spasm, incision and division of external sphincter, under local anesthesia in majority of cases, always gives excellent results. *Hill.* 345

Anemia. TREATMENT. To increase amount of iron in red cells, following suggested: Acidi citrici, 15 Gm. (3¾ drams); ferri citratis solubilis, 4 Gm. (1 dram); aquæ, 120 Gm. (30 drams). One teaspoonful with water before meals and at bedtime. *Hemenway.* 417

Anemia, Pernicious. TREATMENT. Case in a pregnant woman at term in which 4 intragluteal injections of defibrinated human blood, amounting altogether to 159 c.c., proved markedly beneficial. *Esch.* 44

Apoplexy. TREATMENT. In thrombotic apoplexy early reduction of viscosity of blood by means of citric acid gave excellent results. *Hemenway.* Page 417

Appendicitis, Acute. TREATMENT. At onset withhold all food by mouth to arrest peristalsis and reduce virulence of intestinal bacteria. Avoid giving purgative or fluids. Early or immediate operation is safest course. Appendix should be removed if possible, in diffuse peritonitis invariably so. If purgative has been given, an urgent reason for immediate operation is furnished, especially in children. Where there has been sudden cessation of pain after typical onset, operation should be hastened rather than delayed. *Bruce.* 416

Appendicitis, Chronic. DIAGNOSIS. Pain chiefly in right lower quadrant, if unassociated with attacks of epigastric pain and nausea, is seldom due to appendix; before diagnosing chronic appendicitis exclude every other possible condition.

TREATMENT. Appendectomy alone frequently does not cure. This is true especially of patients with chronic constipation; a long, dilated cecum, with other evidences of enteroptosis, is usually present. *Stanton.* 33

Arthritis, Gonorrheal. TREATMENT. Intra-articular injections of iodine tincture, 5 Gm. on the average, used in many cases of various types, with considerable success. Increased swelling at first, then cessation of joint effusion, disappearance of pain, and return of motion. *Hildebrand.* 37

Arthritis, Rheumatoid. TREATMENT. 1. Liberal diet, including plenty of animal food. 2. Guaiacol carbonate in cachets; dose at first from 5 to 10 grains *t. i. d.*, to be increased by 1 to 2 grains each week up to 15 or 20 grains. If given long enough (at least twelve months) this will in many cases arrest disease, diminishing size of joints and permitting of increased movements; it relieves pain markedly. 3. Potassium iodide in 10-grain doses, combined with the guaiacol, increases benefit; its depressing effect to be counteracted by tonics. 4. Thyroid preparations are of value in early cases associated with Raynaud-like symptoms and cramps in extremities. 5. Hot baths, superheated air, or electric light; douche masssage; peat baths or brine baths. 6. Passive movements and massage. 7. Bier's hyperemia, where affected joints few. 8. Fibrolysin followed by massage, where joints more or less fixed owing to fibroid thickenings. 9. Irrigations of colon, where arthritis secondary to chronic colitis. *Luff.* 112

Thyroid preparations useful in many cases of long-standing osteoarthritis and chronic infectious arthritis, probably because of damage to the thyroid gland resulting from its hyperactivity attendant upon continued toxemia. Slow pulse an indication of thyroid failure; emaciation does not preclude it. Dosage of dried thyroid substance ranges from 1½ grains (0.1 Gm.) once daily up to 5 grains (0.3 Gm.) *t. i. d.* in distinct myxedema. Avoid causing headache, diarrhea, or reduction of blood-pressure, and intermit drug from time to time. Thyroid medication necessary for remainder of life where thyroid failure thoroughly established. *Midelton.* 236

Asthma, Bronchial. TREATMENT. Importance of chronic coprostasis and intestinal autointoxication in etiology of asthma shown. Necessity of bowel regulation in the treatment emphasized. *Ebstein.* 33

Epinephrin hydrochloride found most effective drug next to morphine in treatment of the asthmatic paroxysm in 31 cases. Ten to 15 drops of 1: 1000 solution injected under or into skin give immediate relief, which is often also lasting. Blood-pressure not increased by it, but rather lowered. Stramonium cigarettes or fumes give comfort in some patients, hypodermics of nitroglycerin in but a few. Atropine safer but less sure than morphine, which should be last resort. Treatment between paroxysms: Remove reflex causes such as deflected nasal septum, sensitive point near inferior turbinates, disordered stomach, and constipation. Overcome obesity where present. Give prolonged course of potassium iodide, 10 to 15 grains (0.65 to 1.0 Gm.) three times daily, and thereafter alternate use of drug for 10-day periods with 10-day intermissions. *Lemann.* 94

Calcium chloride internally found to exert a notable prophylactic action. After administration for three or four days of a tablespoonful of 5 per cent. calcium chloride in milk every two hours, paroxysms ceased, often not to return for several months. The drug should be continued for a week. No untoward effects. *Kayser.* 416

Blepharitis. TREATMENT. Marginal blepharitis in children to be treated as follows: 1. Remove crusts 2 or 3 times daily with sodium bicarbonate solution (gr. x to f℥j) or, at first, with warm olive oil. 2. After careful washing rub into roots of lashes a stimulating mercurial ointment (gr. viij of ammoniated mercury or gr. iv of yellow oxide of mercury to ℥j of white petrolatum). 3. If much discharge, especially purulent, cutting of lashes will facilitate cleansing; in worst cases, epilate all lashes involved in pustules. 4. If lid much excoriated, paint 1 per cent. silver nitrate solution on surface daily. 5. Keep lids closed with wet carbolic dressing (1 to 80) for a few days in severe cases, removing it *t. i. d.* to cleanse lids; avoid entrance of solution into eye. 6. Keep child from reinfecting lids with fingers by use of lightly smoked, domed protecting spectacles, or in the very young by cardboard splints bandaged on flexor surface of elbows. 7. Prescribe correcting glasses if required, to remove cause of ocular hyperemia. *Lawson.* 103

Burns. TREATMENT. Dry open-air treatment of extensive burns recommended. After thorough cleansing with soap and water and gasoline (under anesthesia, if necessary), dust burn lightly with zinc stearate powder. Give morphine to relieve pain. Once daily remove all heavy crusts, wipe off exudate with dry sponges, and dust on thin coating of powder. Never allow exudate to accumulate under crust over twenty-four hours. Success of treatment lies in constant absolute exposure of the burn. *Jack.* Page 346

Cellulitis. TREATMENT. In cellulitis of hand: Apply Bier bandage and treat pain with hot dressings of saline solution. If pain not relieved, reapply bandage several times; if this still ineffective, make incision or incisions into the part, apply bandage again, continue hot dressings, and have hand placed in bath of hot saline thrice daily. Give iron and arsenic, prepare and inject a vaccine, and administer an antitoxic serum, particularly in early stages. Continue Bier's bandage after cellulitis has subsided and prescribe active movements and electric stimulation of muscles. X-rays often useful to cause deep hyperemia and promote removal of inflammatory products. Massage and passive movements after all inflammation gone. *Corner.* 346

Clavicle, Fracture of. TREATMENT. Dressing of heavy moleskin plaster devised to avoid skin irritation of zinc oxide plaster and prevent looseness of dressing requiring reapplication. Warm a piece of moleskin 4 or 5 inches wide by 18 long, loop it about humerus high up in axilla, join its ends, and insert eyelets in them for lacing. Place a second strip around healthy side of body and adapt its posterior end for lacing with humeral loop, thus drawing shoulder of injured side back. Next place piece of moleskin 7 x 10 inches over healthy shoulder as a cap, and insert eyelets in free ends anteriorly and posterior. Pass a long strip 3 inches wide around forearm of injured side close to elbow, and connect ends in front of and behind body by laces with shoulder cap on healthy side, thus providing for elevation of injured shoulder. By tightening one lacing more than other, elbow may be brought forward or back as desired. Wait till adhesive well secured to skin before tightening laces. *Collins.* 347

Colitis, Mucous. TREATMENT. Apply to abdomen at night towel soaked in magnesium sulphate solution, ½ ounce to 1 pint of water, at 75° F. Irrigate rectum with 2 gallons of same solution at 85° to 90° F. Mucus disappears, and pain and gas formation diminish. Milk diet, with fruit, especially grapes, added, also effective; 1½ quarts of milk to be taken during day and 1 pint of hot milk at bedtime; continue for ten days to two weeks. Crude tar of *Pinus palustris*, mixed with flour and ordered in No. 2 gelatin capsules, gave good results; 2 or 3 capsules one hour after meals. *Joseph.* 42

Calumba-agar, containing solid constituents of 2 c.c. of fl. ext. calumbæ in 1 Gm. of agar, found useful in colitis with mucus in stools (*v.* Constipation). *Einhorn.* 231

In treating spastic constipation in these cases: (1) Where weakness of abdominal muscles, prescribe an elastic belt to support abdomen above pubes, especially in the obese; combine with this exercises. (2) Where feces too dry, salines, with or without agar-agar or regulin, give best results. (3) Where insomnia in early morning hours, a saline draught will often bring on sleep. (4) Where pain is present owing to slow passage of inspissated fecal material, give oxgall pills and oil enemata. (5) Cellulose in diet helps to prevent fecal accumulations, but discretion is required in its use; agar-agar should be used as a material to replace vegetable fiber. *Higgins.* 295

Conjunctivitis, Gonorrheal. TREATMENT. Fifteen severe cases treated by local application of steam, to kill gonococci. As soon as eyelids can be everted—iced compresses having been applied—conjunctival sac is syringed with potassium permanganate solution, dried with gauze, and treated with steam, neighboring skin being protected with linen or wet gauze. Where chemosis marked, ocular conjunctiva is also steamed, care being taken to avoid cornea. Ten patients with corneas uninvolved rapidly and completely recovered, discharge early ceasing; in the 5 other cases conjunctivitis was cured, together with, in 1 instance, cornea. Steam treatment considered superior to silver nitrate. *Goldzieher.* 419

Constipation. TREATMENT. Hormonal, 20 c.c. injected intravenously or intramuscularly, found effective in constipation with general atony and in postoperative paresis. *Hoxie.* 170

Medicated agars considered useful. Phenolphthalein-agar, containing 0.03 Gm. of phenolphthalein in 1 Gm. of agar, and rhubarb-agar, containing 1 c.c. of fl. ext. rhei in 1 Gm. of agar, recommended. Prepared by dissolving remedy in boiling agar water solution, thoroughly mixing, evaporating to the original dry agar volume, and grinding up into flakes. Dose, 1 teaspoonful twice daily in water after meals. *Einhorn.* 231

Constipation with Diarrhea. Found in gouty patients, after abdominal and rectal operations, in pulmonary tuberculosis, in achylia gastrica, and in hypochlorhydria with gastrointestinal atony.

TREATMENT. A few (3 to 5) 2- to 5- grain doses of calomel, followed by magnesium sulphate, or sodium sulphate, or a laxative water; in other cases, castor oil in ½- to 1-dram doses 2 or 3 times daily, continued for a month. Ichthyol valuable in cases with much fermentation. Physical treatment with oil or oil-emulsion enemas, hot baths with massage, or hot wet packs changed every 15 to 30 minutes. Rest in bed. Gastric lavage. Well-prepared food. Strong, black coffee with

plenty of sugar often useful; also good beer or cream; bread spread with butter and honey; stewed or dried fruit (latter soaked in water); cheese; agar-agar, etc. Modest exercise alternating with rest; salt baths, sitz baths; sensible wearing apparel; correctly fitted corset. *Bernheim.* Page 69

Corneal Ulceration. TREATMENT. Large doses of pneumococcus serum brought about prompt cure in 70 per cent. of cases of pneumococcic corneal ulceration. *Gebb.* 426

Coryza, Acute. Aromatic spirit of ammonia and sweet spirit of niter recommended as best agents to "abort" a cold. *Beverley Robinson.* 47

Mixed stock vaccine composed of various strains of pneumococcus, 40,000,000; streptococcus, 30,000,000, and staphylococcus, 150,000,000, recommended in colds. Marked improvement usually apparent twelve to twenty-four hours after first inoculation. Repeat dose on second day, then, in prolonged cases, at three- to six- day intervals. Severe complications following colds prevented by vaccine treatment. In cases where catarrhal condition persists between acute attacks, *M. catarrhalis*, 100,000,000, should be substituted for staphylococcus in the vaccine. In some cases, dose has to be doubled. Inoculations made at four- to seven- day intervals for several months. *Sherman.* 291

Diabetes Mellitus. TREATMENT. Sodium perborate, applied as a powder, usually twice daily, brought about rapid healing in 3 cases of diabetic gangrenous ulcers. *Herzfeld.* 167

Diarrhea. TREATMENT. Agar medicated with astringents found useful where intestinal mucosa inflamed or ulcerated. Gambir-agar, containing solid constituents of 2 c.c. of tr. gambir comp. in 1 Gm. of agar; tannin-agar, 0.03 Gm. of tannin to 1 Gm.; simaruba-agar, 1 c.c. of tincture to 1 Gm., and myrtle-agar, 1 c.c. of tincture to 1 Gm., recommended, the last especially in diabetic cases (*v.* Constipation). *Einhorn.* 231

Diarrhea, Infantile. TREATMENT. Soy flour useful in summer diarrhea and some forms of intestinal indigestion; given in form of dilute gruel with or without addition of barley flour and later condensed milk or cows' milk. One to 2 level tablespoonfuls of soy flour to the quart suffice at first; later increased to 4 spoonfuls. Soy-bean, barley, and condensed-milk mixtures useful where, cows' milk disagreeing, there is difficulty in finding food sufficiently nutritious for child. Orange juice advisable from time to time to prevent tendency to scurvy. *Ruhräh.* 52

Following combination recommended in the more severe forms of infantile diarrhea: Magnesii sulphatis, ʒj-ij (4.0-8.0 Gm.); mucilaginis acaciæ, fʒss (15 c.c.); phenylis salicylatis, gr. v-x (0.3-0.6 Gm.); glycerini, fʒiij (12 c.c.); aquæ chloroformi, q. s. ad fʒiij (90 c.c.). Give 1 teaspoonful every one, two or three hours, sleeping or waking, vomiting or not. Add glycerin when urine concentrated, or give a little sweet spirit of niter separately. Where the salol causes nausea and vomiting, omit it. Take character of stools as guide to frequency of administration: If blood in them does not diminish increase number of doses. Feed child with barley water and white of egg beaten up with an equal amount of water, or better, soda water. In serious cases peptonoids may be added though they sometimes disagree. Place pinch of pepsin scales on tongue after food. *Ellis.* 349

Diphtheria. TREATMENT. Case in which, after a cure with antitoxin, throat cultures showed abundant diphtheria bacilli three weeks after start of disease. Repeated applications to the throat of a dilute culture of *Staphylococcus pyogenes aureus*, made by inoculating 8 c.c. of bouillon with a loopful of a fresh agar growth of the coccus, led to disappearance of diphtheria organisms from throat, thus preventing the child from being a "diphtheria carrier." General condition markedly improved. No untoward effects. *Page.* 166

Eclampsia, Puerperal. TREATMENT. Citric acid found of great value in cases of threatened eclampsia, with marked edema and albuminuria. Following combination advised: Acidi citrici, 30 Gm. (7½ drams); liquoris sodii phosphatis comp., 80 Gm. (2½ ounces); water, 40 Gm. (10 drams); 1 dram in a full glass of water every three hours; later, twenty minutes before each meal and at bedtime. *Hemenway.* 417

Eczema. TREATMENT. Alcohol useful as antiparasitic and to relieve itching. Apply 90 per cent. alcohol twice daily to and around lesions before carrying out other local measures. Good results even in rebellious cases. Applicable in all forms of eczema except those with abundant watery discharge. Continue long after affection overcome, to prevent recurrence. *Monatsh. f. pr. Dermat.* 96

Local treatment with heated air employed in 35 cases of eczema in infants, with good results. Applications made once daily for five to ten minutes; affected region then covered with olive oil. Strict dietetic measures also to be enforced. *Perlmann.* 167

Venesection followed by injection of salt solution gave good results in certain cases of chronic eczema with itching in which other treatment, including X-rays, had failed. (V. Pruritus, Treatment.) *Simon.* 365

Eczema rubrum of lower extremities to be treated thus: Restrict intake of meats and sweets, interdict alcohol, cause bowels to move daily, and advise fresh air and at least eight hours' sleep. Locally, remove surgically any varices present, if situated above eczematous area. Then use rubber bandage. First apply ordinary lint around leg, with woolly side covered thickly with a salve and placed over diseased area. Then put on thin rubber bandage, about 3 inches wide and 5 yards long, from toes to knee, overlapping one-third

of width, without reversing and leaving heel free. Maintain an even degree of pressure. At night remove bandage and dressing. Wash former in dilute phenol (3j-Oj) and draw through dry towel. Wash leg with weak phenol, dry with absorbent cotton, and apply an astringent cooling lotion twice at fifteen-minute intervals. Dress leg and reapply rubber bandage in morning. *Bechet.* Page 418

Enterocolitis in Infants. TREATMENT. Pure cultures of *B. bulgaricus* used with marked benefit, all cases except the most advanced being cured. After preliminary dose or two of castor oil, liquid cultures given in doses of ½ or 1 teaspoonful every three or six hours, in a little water with milk-sugar. Diet for first one or two days: Whey from pure milk, diluted according to age; later, add milk in increasing amount, and for older babies barley or other cereal water. Milk used must be free of preservative, otherwise lactic bacilli inhibited. Where purity of milk not certainly known, give barley water with lime water and milk-sugar, and later add condensed milk. In breast-fed infants, milk usually continued and cultures given between feedings. *Harrington.* 351

Epididymitis, Gonorrheal. TREATMENT. Where preliminary pain at external abdominal ring (vasitis), put patient to bed and support scrotum by strip of adhesive stretched over anterior surfaces of thighs. For established epididymitis, support scrotum in same way, and apply to it following ointment: Mentholis, gr. xv (1 Gm.); ung. belladonnæ, gr. xx (1.3 Gm.); ung. Credé, gr. xxx (1.3 Gm.); ichthyolis, ʒj (4 Gm.); petrolati, q. s. ad ℥j (32 Gm.). If swelling of epididymis does not quickly resolve, strap testicle, as follows: Envelop affected half of scrotum in a square of gauze. Press testicle into bottom of scrotum with thumb and index finger and bind a strip of adhesive above organ, holding it down. Then pass other strips, starting at the first one, around under testicle and up the opposite side until organ is covered. Finally, secure with another transverse strip over the first. Support with suspensory. Renew strapping every other day. *Bethune.* 228

Epilepsy. TREATMENT. (1) Secure bowel movements once or twice daily. (2) Have patient drink water freely. (3) Tepid sponge bathing or brief immersion baths followed by gentle rubbing. (4) Mild exercise in open air. (5) Mixed diet, consisting of vegetables and milk in liberal amount, and also white meats; starchy foods in limited quantity; normal amount of fats. Correct digestive difficulties. (6) Bromides to be used early in disease and in sufficient amount to control seizures. (7) Sodium chloride withdrawal found an aid to bromides, though prohibition of salt should not be so radical as to cause anorexia and loss of weight. (8) Combination of sodium glycerophosphate with bromides proves beneficial. (9) Thyroid extract valuable in epileptic children with arrest of development, as well as, occasionally, in other cases; to be given persistently, in small doses; after a time, it will be found bromides can be reduced or even for a while suspended. (10) Trial of pituitrin in epilepsy justifiable. (11) Symptoms preliminary to seizures, such as headache, depression, etc., indicate the prophylactic use of a saline purge, diminution of food, and increased bromide dosage. *Dercum.* 292

Operation justifiable: (*a*) In traumatic epilepsy with external evidence of injury; (*b*) *do.*, without evidence of injury when nature of attacks or symptoms immediately following injury indicates seat of lesion; (*c*) in Jacksonian epilepsy; (*d*) in general epilepsy where suggestion of a focal lesion may be found before or after attacks in some disturbance of motion, sensation, or reflexes. Gratifying results may be anticipated after operation in 10 to 25 per cent. of cases. *Frazier.* 293

Epistaxis. TREATMENT. Sodium perborate used with success to arrest hemorrhage in epistaxis and after adenoid operations or tonsillotomies. *Herzfeld.* 167

Erysipelas. TREATMENT. Solution of 20 drops of phenol in 25 Gm. (6 drams) of pure neutral glycerin recommended. It is painted over affected area and surrounding skin, but must not come in contact with mucous membranes. *Lodi.* 98

Solution of aluminum acetate recommended for local use in facial erysipelas (*v.* Furuncle). *Stansbury.* 227

Paint involved area in mild cases every hour with preparation of 15 minims (1 c.c.) of phenol and 1 ounce (30 c.c.) of turpentine oil. Treat severe, widespread cases with dressings soaked in mercury bichloride, or better, absolute alcohol, applied twice daily or oftener. Internally give 4 drams (15 c.c.) of camphor water three times daily, and by enema 15 grains (1 Gm.) of collargol twice daily. *Van Velzen.* 348

Esophageal Carcinoma. TREATMENT. Small amounts of hydrogen peroxide solution of 1 to 2 per cent. strength, sipped at intervals of an hour, facilitate descent of food, even in late cases where rectal feeding has been resorted to. *Liebermeister.* 98

Femur, Fracture of Neck of. TREATMENT. Apply extension apparatus. Control eversion of foot as follows: Thin a medium-sized pillow along one edge and slip this under limb, reaching nearly to heel. Pin securely to bandage supporting the extension straps, roll pillow firmly against limb, and pin at its other edge. Put firm roller bandage around pillow and limb. Pillow should be adjusted to raise heel a little, avoiding pressure on it. Finally, place smaller pillow under popliteal space and fasten to the larger pillow. *Totman.* 228

Furuncle. TREATMENT. Seen early, a superficial furuncle may be aborted by in-

serting pointed matchstick, dipped in phenol, deeply into its center; if lesion deep, inject several drops of liquefied phenol at base of lesion. For a furuncle seen late in first stage: Scratch off central vesicle and apply a Bier cup. Dress with sterile gauze wrung from normal saline solution with 1 per cent. sodium citrate, after inserting a bit of rubber dam in opening if there be tension. Protect surrounding skin from citrate with ointment, and over citrate gauze apply waxed paper or oiled silk, covered by compress and bandage. Cupping and dressing may be repeated every four hours until slough loose, when latter is removed with small forceps. Apply citrate only three days. Also give citrate internally, 15 grains (1 Gm.) *t. i. d.* after meals. Where bluish, flabby granulations: Strap edges of wound with adhesive strips, dry granulations, mop with iodine tr., and dust with Bier's powdered silver nitrate. Snip off exuberant granulations. To promote epithelial regeneration, use 8 per cent. scarlet red ointment or amidoazotoluol. Prevent autoinoculation by shaving skin around furuncle and disinfecting with 70 per cent. alcohol, tincture of iodine with benzine, diluted liquor formaldehydi, or aluminum acetate solution. Repeat local disinfection with benzine at each dressing. Where furuncle first seen in stage of softening, incise and drain; latter may be assisted with a Bier cup. For very large lesions or in furuncles of face, inject 3 per cent. novocaine under base, wait five minutes, and remove core from tumor with small curette. Where supposed boils become carbuncles, excise the whole area, controlling bleeding with cautery and compresses, and apply pure liquefied phenol. For recurring furunculosis: Bacterin therapy with killed staphylococci; initial dose, 100 million bacteria, increased by weekly doses up to 1 billion. Yeast also useful. *Skillern.* Page 99

Solution of aluminum acetate recommended for local use. Made with aluminum sulphate and acetic acid, of each, 300 Gm.; calcium carbonate, 130 Gm.; distilled water, 1000 c.c. For use, dilute with distilled water, 1 to 7 or 10, and apply to parts on several thicknesses of gauze, covered with rubber tissue or oiled silk, and a loose bandage. Addition of ¼ volume of alcohol or glycerin to solution avoids wrinkling and whitening effect on skin. *Stansbury.* 227

Venesection followed by injection of salt solution gave much benefit in furunculosis. (V. Pruritus, Treatment.) *Simon.* 365

Gastric Dilatation. DIAGNOSIS. Vomiting, abdominal pain, distention, constipation (occasionally diarrhea), collapse, splashing sounds, and peristaltic movement over stomach, appearing suddenly in the course of pneumonia, should at once suggest acute gastric dilatation.

TREATMENT. 1. Introduce stomach tube and practise lavage as often as distention occurs, even in cases with collapse. 2. Turn patient on right side or face. 3. Interdict food and drink by mouth. 4. Strychnine and eserine hypodermically apparently useful in some cases. *Fussell.* 107

Gastric Neuroses. TREATMENT. Condition nearly always associated with gastric atony and vertical "fish-hook" stomach. 1. Relief from pain (due to hyperacidity) obtained by recumbent position on right side or knee-chest posture for several minutes at short intervals after meals. 2. Peristalsis assisted by massage or having patient clasp left knee and make strong intermittent pressure of thigh against abdomen while lying halfway between prone and lateral position. 3. Helpful suggestion. 4. Abundant nourishment in small quantities at short intervals. 5. Attention to any existing anemia. Rational non-surgical treatment effective in majority of cases. *Greene.* 174

Fresh pineapple juice found useful to relieve anorexia. *Floersheim.* 233

Gastric Ulcer. DIAGNOSIS. Rice, milk, potatoes, and prunes cause positive reaction in benzidine test for occult blood in stomach contents, and hence must be excluded from diet before test is made. *Floersheim.* 105

Watermelon pulp found to cause positive reaction in guaiac-turpentine test for occult blood in feces. *Newbold.* 106

Gastritis. TREATMENT. In gastric catarrh with much mucus, citric acid often gives quick relief. Withhold carbohydrates from dietary where amylaceous dyspepsia coexists. In acute gastritis give sodium or potassium citrate and larger amounts of water. *Hemenway.* 417

Gonorrhea, Acute. TREATMENT. Method causing arrest of suppuration in three to five days described. Inject ɔ to 15 c.c. (¼ to 4 drams) of 0.25 per cent. protargol solution into urethra every half-hour in daytime and every hour at night. To be retained two to ten minutes, during which time urethra is gently massaged from behind forward. Increase strength of solution gradually. Patient should ingest large amount of fluid, in order to be able to urinate before each injection. Continue injections, given as often as possible, two or three weeks after cessation of pus. Then alternate protargol with lead acetate and zinc sulphate, of each, 0.3 Gm. (2 grains) in 200 Gm. (4⅔ ounces) of water. *Kuhn.* 37

Necessity of early treatment emphasized. Inject slowly into urethra 1½ drams (6 c.c.) of 1: 6 solution of argyrol, and have it retained for five minutes. Patient should then stay as long as possible without urinating. Physician is to give 2 injections daily, morning and evening, while in interval patient makes 2 injections of a 1: 25 solution. Patients thus early treated cured in from two to five days. Continue strong injections until

urethra dry and redness gone. Patient may then keep on injecting weak solution. *Winet.* Page 419

Gonorrheal Cervicitis and Endometritis. TREATMENT. I. Acute cases: 1. Confinement to bed. 2. Keep emunctories active. 3. Limit diet. 4. Cleanse vagina frequently with large amounts of hot saline solution or hot water containing boric acid or a weak iodine solution. Use irrigator with nozzle projecting a straight forcible stream, and pinch mucous membrane of introitus around nozzle, to flush cavity satisfactorily. Intrauterine measures and pelvic operation intervention contraindicated. II. Subacute cases: 1. Soften and dilate cervix with Goelet's uterine electrodes and galvanic current. 2. Flush uterine cavity with hot iodine solution, 1 dram (4 c.c.) of the tincture to a quart of water, or silver nitrate, 1: 5000. 3. As condition improves, substitute daily intrauterine injections of iodized phenol (equal parts of iodine tincture and phenol) or 1 per cent. silver nitrate. Use syringe with long pliable nozzle, with its tip wrapped with cotton; inject fluid into cotton and withdraw syringe. Insert iodine-glycerin tampon (1 dram to 4 ounces), which patient is to remove next morning. Remove cotton within uterus at next visit. III. Chronic cases: 1. Puncture, evacuate, and sterilize diseased Nabothian glands. 2. Touch opened glands and erosions about os with pure iodine tincture. 3. Intrauterine irrigations and injections as above, three times weekly. 4. Curettage of uterus, thoroughly scraping internal os and cervical canal, followed by swabbing with iodine tincture and appropriate after-treatment. *Dannreuther.* 100

Gout. TREATMENT. Radium emanations used in 400 cases of gout and chronic arthritis. Patient in closed radium room for 24 to 36 sittings of two hours each. Injections of soluble radium salts near involved joints given in addition; also superheated air, electric light, and brine baths. Absolute rest in bed an adjuvant. Out of 50 cases in which blood was examined before and after treatment, uric acid disappeared in 37 instances, synchronously with marked amelioration. Cases in children particularly benefited, but cases of senile tuberculous and syphilitic arthritis and cases of very long standing, with marked joint changes, not suited for radium treatment. Low purin diet should also be tried for a few weeks or months; if ineffective, replace it by simple mixed diet, with as much of green vegetables and fruit as possible. *Gudzent.* 95

Combination of sodium citrate with salicylate recommended for gouty conditions (*v.* Rheumatism, Chronic). *Hemenway.* 417

Hay Fever. TREATMENT. Calcium creosote solution diluted with 8 to 10 parts of water recommended; throat and nasal fossæ to be sprayed every hour or two for two or three days. Potassium iodide, 5 grains *t. i. d.*, effective in hay asthma; arsenic may be added with advantage. *Kolipinski.* 77

Mixed staphylococcus, pneumococcus, and streptococcus vaccine given at three- to four-day intervals with pronounced benefit. Some cures after 3 or 4 inoculations (*v.* Coryza, Acute). *Sherman.* 291

Hemophilia. TREATMENT. Bleeding from wound in a hemophilic boy, previously uninfluenced by any remedial agent, checked by allowing blood from finger of a normal individual to drop on the wound. A clot formed immediately. *Sayer.* 168

Hemorrhoids. TREATMENT. Injection method used in 55 cases with satisfactory results. After suitable preparation, place patient on left side, with knees flexed. If tumor presents, apply compress soaked in 2 per cent. phenol to it and allow to remain two or three minutes; if not, use rectal speculum. Solution to be injected into pile consists of equal parts of phenol, glycerin, and sterile water, and of this 2 to 4 minims (0.12 to 0.25 c.c.) are used, according to size of growth. After injection tumor should be forced back above sphincter, and patient recline for next six hours and abstain from straining, etc. If prolapse should occur, pile should be returned at once and hot compresses frequently applied. Pain after operation may be relieved, if necessary, with a few 2½-grain (0.15 Gm.) tablets of Dover's powder, though it is rarely severe. Inflammation of pile occurred in 3 cases of series. After disappearance of tumor a small ulcer may remain, which will rapidly heal on applying silver nitrate solution (10 or 15 grains to the ounce) every two or three days. *Wilkinson.* 168

Hepatic Affections. TREATMENT. Combination of sodium salicylate and sodium benzoate found useful for cholagogue and "flushing-out" effects in various disorders, especially suppurative angiocholitis, cholecystitis, and lithiasis. Sodium salicylate induces flow of concentrated bile; sodium benzoate, of dilute bile. Relative amounts of two salts to be varied according to indications. Formula suggested: Sodium benzoate, 0.75 Gm. (12 grains); sodium salicylate, 0.5 Gm. (8 grains); sodium borate, 0.25 Gm. (4 grains); rhubarb, 0.3 Gm. (5 grains); to be taken *t. i. d.* *Polain-Cartier.* 38

Hernia, Inguinal. TREATMENT. In infants use truss; to be kept applied continuously. After two years, if hernia still persists, urge radical cure, if possible. *Campbell.* 169

Hodgkin's Disease. TREATMENT. Röntgen rays cause prompt reduction of glands. Whenever recurrence is manifest, renew the treatment. External tumors can thus be controlled a long time, or until patients succumb to deep involvement. *Boggs.* 229

Hyperchlorhydria. TREATMENT. Rhubarb and soda, or rhubarb and magnesia, either in mistura rhei et sodæ or in Gregory's powder,

useful in gastric disorders with fermentation or hyperacidity. *Beverley Robinson.* Page 47

Hyperidrosis. TREATMENT. For sweating feet: Bathe them every night with 1 per cent. potassium permanganate solution and dry thoroughly. Next morning dust on following powder: Potass. permang., ʒij (8.0); alumin. pulv., gr. xx (1.25); talc. pulv., ʒj (32.0); zinci carbonat. et oxid., of each, ʒss (16.0); or else, have patient wear white stockings previously soaked in saturated boric acid solution. Where bromidrosis, use dilute formalin. For sweating in axillæ: Bathe with weak vinegar, and apply following powder on gauze pad: Acid. salicyl., gr. xx (1.25); amyli pulv., ʒij (8.0); alumin. pulv., q. s. ad ʒiss (48.0); or else, use following lotion: Betanaphtholis, ʒj (4.0); glycerini, ʒij (8.0); alcoholis, q. s. ad ʒiiss (80.0). Where persistent bromidrosis, short exposures to X-rays may be effective. *Meachen.* 177

Hyperthyroidism. DIAGNOSIS. Elevation of temperature found an early symptom in many cases, especially mild ones. When, in absence of acute or other tangible disease, there have been loss of weight and augmented nitrogen and phosphoric acid excretion, and when, after administration of a thyroid or iodine preparation, there occur the characteristic psychoneurotic and cardiac symptoms of excessive thyroid activity, elevation of temperature is a thyrotoxic phenomenon. *Stern.* 39

Hypothyroidism. DIAGNOSIS. Blood showing mild leucocytosis and relative lymphocytosis with eosinophilia from 3 per cent. up is highly suggestive of thyroid insufficiency. *Collins and Kaplan.* 40

Ileus. TREATMENT. Enterostomy performed in 20 cases in terminal stages of ileus, with result that only 16.6 per cent. died from the condition. Should preferably be done before intestinal paralysis is complete and abdominal muscles stretched beyond limit of tonicity. Lower ileum is seat of election for opening in gut; colon should not be used. Tube not less than 5/16 in. inside diameter should be used for drainage. *Taylor.* 397

Inertia, Uterine. TREATMENT. In secondary inertia and where pains ineffective owing to hydramnios or twin pregnancy, intramuscular injection of pituitary extract is indicated. May also be employed in febrile states. Where complications expected after birth, inject pituitary extract a few minutes before end of second stage. Where used in first stage, time to inject is when os is a little less than size of palm in primiparæ, and when it will just admit 2 fingers in multiparæ. *Jaeger.* 234

Intertrigo. TREATMENT. In infants acute enterocolitis, frequently the cause of intertrigo through the irritating discharges, should be overcome by dieting: stop milk; give rice, arrowroot, or albumin water, with plenty of pure water to allay thirst. Internally, give sodium phosphate, 5 to 10 grains (0.3 to 0.6 Gm.) every morning for two or three days, usually followed by castor oil, 1 dram (4.0 c.c.). Locally, soak parts with oatmeal water. Give an oatmeal bath, by soaking bag filled with oatmeal in tub filled with boiling water for one-half hour, then allowing to cool to 100° F. and giving child hip bath. Then use following salve: Calamin and zinc oxide, of each, 3 parts; petrolatum, 50 parts. Dust parts with cornstarch or wheat flour. Use salve three times daily, previously cleansing parts with olive oil, if necessary. *Fischer.* 170

Intestinal Indigestion. TREATMENT. Pure cultures of *B. bulgaricus* used with benefit in cases of indigestion of putrefactive type with odorous stools and indicanuria. Dosage, for adults, 3 to 4 teaspoonfuls of liquid culture 2 or 3 times daily, preferably in sweetened water before meals. Antiseptics internally to be avoided during treatment. Diet: Meat and eggs in limited amount only, or at first prohibited entirely; give buttermilk and milk containing no preservative; fruits and sweets freely; fats, cream, butter, bacon and gelatin; vegetables, if starch digestion good; bread and cereals. *Harrington.* 351

Intestinal Paresis, Postoperative. TREATMENT. Pituitary extract used in 21 laparotomy cases. Dose, 16 minims (1 c.c.), commenced six hours after operation and repeated every few hours until 18 doses given. All patients passed flatus freely within a few hours, and were free of pain and distention. In all cases but 2, bowel action was obtained after a simple enema. Three intramuscular injections of 1 c.c. each recommended during first twenty-four hours as routine practice in laparotomy cases. Pulse rate remains much lower than usual. *Bidwell.* 44

Jaundice, Catarrhal. TREATMENT. Cold injections of water or normal saline solution recommended, favoring biliary flow by promoting peristalsis. *Polain-Cartier.* 38

Laryngitis, Acute. TREATMENT. Freshly powdered cubeb, taken frequently and in moderate amount dry on tongue, found of service in acute throat disorders. *Beverley Robinson.* 47

Leg Ulcers. TREATMENT. Long-continued leg ulcerations are often accompanied by changes in underlying long bones, demonstrable by radiography. Periosteum finally involved. Potassium iodide is of value in these cases. *Coues.* 352

Lupus. TREATMENT. Pfannenstiel's method found useful in lupus of nasal mucous membranes. Give patient 45 grains (3 Gm.) of sodium iodide daily, divided into 6 doses. Every morning cleanse nasal cavity of crusts with nasal douche containing sodium chloride and boric acid, and, after drying, insert tampon of sterile gauze, in contact with affected parts. Have patient keep tampon constantly moist with 2 per cent. hydrogen peroxide solu-

tion. Free iodine is thus liberated from iodide excreted by nasal mucosa, exerting its effect on lesions. In early cases ulcerations heal in one to three weeks. *Sequeira.*
Page 102

Malaria. DIAGNOSIS. Intensely black blood-pigment in the urine considered a pathognomonic sign of malaria. Centrifugalize urine in a clean tube for five minutes and examine drop from bottom under high power. Pigment appears in very fine granules, almost always grouped; somewhat larger granules; large polymorphous masses, and granules inclosed in hyaline plaques or leucocytes. *Urriola.* 232

Mastoiditis. DIAGNOSIS. A small mastoid process with thick outer cortex and small antrum is especially subject to "atypical" mastoiditis, condition escaping detection until serious complications appear. Suspicious symptoms in such cases are: 1. Discharge from ear more profuse than one would readily expect from middle ear alone and continuing profuse for two or three weeks. 2. Increased swelling of posterosuperior wall of external auditory canal. X-ray found useful for early diagnosis in a number of cases. *Crockett.* 41

Blurring of outline of tip of mastoid elicited by grasping both mastoids anteriorly and posteriorly between fingers and noting difference of definiteness of outline on the healthy and abnormal sides found valuable as corroborative evidence in early, doubtful cases of mastoiditis. Swelling from otitis externa may be confusing, but this is usually reduced in a few days by local treatment and ice-bag, while blurring of mastoid remains. *Alderton.* 104

Melæna Neonatorum. ETIOLOGY. Condition ascribed to oral infection; "mouth-cleansing" after birth considered inadvisable, giving chance for introduction of organisms. TREATMENT. Desperate case saved by injections of human blood-serum, doses of 20, 18, 10, 6, 18, 14, and 6 c.c. being given in four days. Method of securing serum was ordinary venesection (after careful skin cleansing), serum being allowed to separate spontaneously from clot in ¼-liter flasks. Injections made with antitoxin syringe anywhere from scapulæ to buttocks. *Nicholson.* 172

Myxedema. DIAGNOSIS. Where, in presence of puffy eyelids or dyspnea, physical examination does not yield evidence of renal or heart lesions, the existence of incipient or incomplete myxedema should be suspected. Therapeutic test—thyroid preparations in moderate dosage for a month—will confirm or disprove existence of hypothyroidism. *Butler.* 348

Nasal Accessory Sinuses, Inflammation of. TREATMENT. In acute cases: 1. Calomel followed by a saline, then by diaphoresis with hot lemonade. 2. Liquid diet. 3. Acetylsalicylic acid or hexamethylenamine, to reduce suppuration. 4. Atropine sometimes valuable, but to be used with care. 5. Locally, application with cotton swab of 2 per cent. cocaine solution, followed by epinephrin, then by 4 per cent. antipyrin. Spray of epinephrin in alkaline medium every two or three hours. 6. After thorough contraction of mucosæ, clear opening of sinus or sinuses with swab and irrigate nose gently with warm saline solution containing a little sodium bicarbonate. 7. Oily spray of menthol and camphor. 8. Mild suction with exhaust bulb or Brawley apparatus. 9. Leucodescent lamp to relieve discomfort. 10. Hot applications. 11. Irrigation of sinuses (difficult, sometimes impossible without removal of bone). If condition unrelieved in a few days, operation. In subacute cases, same treatment + autovaccines. Latter also useful to hasten recovery in acute cases. *Miller.* 173

Nephritis. TREATMENT. Mild forms of nephritis probably often recover after renal decapsulation (doubtless some of these would recover under medical measures). In a case of acute interstitial nephritis with miliary abscess formation, patient recovered apparently because of decapsulation and scarification of cortex. Patients with high-grade parenchymatous change may be given a respite for six months to several years, but their symptoms will probably eventually recur; in such cases, a secondary decapsulation is to be considered. In parenchymatous nephritis with marked general edema, relief is generally so transient as to make operation of questionable value. *Babcock.* 257

Following diet useful in protecting patient with early chronic interstitial nephritis from ultimate failure of circulatory balance: Breakfast: Large helpings of bulky fruits; an egg and 2 thin slices of bacon; a slice of bread, or an equivalent of toast, muffin, waffles, cereal, etc.; tea, cocoa, coffee, milk, water, or carbonated water. Luncheon: Large helping of some vegetable salad, with pickles, olives, or other relish; a moderate amount of cheese; breads and liquids as at breakfast. Dinner: Vegetable, milk, or cream soup; piece of meat, fowl, fish, or game, about 2 x 2 x ½ inch in size; gravies in moderation; freely of all kinds of succulent vegetables, though moderately of potato, rice and other starchy foods; breads and liquids as at breakfast; a simple dessert. Total of food taken should be smallest which will maintain nutrition at highest level, as judged by body weight and sense of well-being. Where tendency to increase of weight, reduce amount of bread, potato and other starchy foods, and *vice versâ*. Upon rising and two and one-half or three hours after meals, a small glass of water or carbonated water should be taken. Moderate physical exercise desirable; if impossible, replace it by massage. Take body weight, measure all liquids taken and voided, and examine urine, weekly. Once in four weeks, give 2 freshly made 5 grain pills of mercurial mass every night for three

days, followed the first time by ½ ounce of castor oil in morning, and the other two mornings by a saline. *Wells.* Page 354

Osteomalacia. TREATMENT. Daily doses of 3 to 5 dessertspoonfuls of a 0.01 per cent. solution of phosphorus in codliver oil, with rest in bed and baths as adjuvants, used with success in 6 cases of senile osteomalacia. *Reich.* 356

Otitis Media, Acute. TREATMENT. Relation of acute pharyngitis, nasal-sinus, middle-ear, and mastoid inflammations to an "active autotoxic state" of the system emphasized. Calomel in $\frac{1}{10}$-grain (0.006 Gm.) doses, frequently repeated up to 1 or 1½ grains, found valuable to stimulate defensive powers of body and shorten convalescence. Used in combination with local treatment. Calomel, followed by castor oil or salines, given every other day. *Snow.* 42

Pain, Local. TREATMENT. Combination of menthol and methyl salicylate in hydrated wool-fat, covered with cotton and gauze bandage, recommended to relieve local pain where skin is intact. *Beverley Robinson.* 47

Paralysis Agitans. DIAGNOSIS. New sign, present in the early period of rigidity, when diagnosis difficult, described. Consists of a "cog-wheel," intermittent resistance felt when examiner grasps wrist with one hand, steadies arm above elbow with the other, and makes rapid flexion and extension of arm. Never found present in other diseases. *Moyer.* 176

Paralysis, General. TREATMENT. Salvarsan administered intravenously in a case of paresis in maniacal stage, with marked improvement. *Holland.* 73

Two cases reported in which salvarsan was of distinct benefit. *Daland.* 298

Pellagra. TREATMENT. 1. In mild or apparently cured cases: Moderate amount of exercise and fresh air, avoiding direct sunlight; varied diet, with some fruit and green vegetables, but no corn or its products. 2. Arsenic in large doses early in disease, later only in small doses. In early stages, give soamin hypodermically, starting with 1 grain every other day and increasing up to 3 or more grains to the dose until 75 to 100 grains have been given, followed by two weeks' rest, then resumption if necessary. For internal use, Donovan's solution apparently best. 3. Massage and hydrotherapy; give daily salt baths at body temperature, rubbing coarsely powdered salt, just moistened, vigorously all over body, a handful at a time. 4. For skin lesions: Moist boric acid dressing or ointment of boric acid or zinc oxide ointment usually suffices at first. Where epithelial regeneration going on and surface moist, paint occasionally with weak picric acid solution. Where sloughing and suppuration, wash daily with hydrogen peroxide and dust aristol or bismuth formic iodide lightly upon surface; autogenous vaccine may limit extension. Where desquamation, dryness and thickening, give daily salt rub and massage with lanolin or cocoa butter. 5. For gastro-intestinal symptoms: Give mixture of 20 drops of dilute HCl or nitrohydrochloric acid with 1 dram of essence of pepsin and 10 drops tincture of nux vomica after each meal. Where vomiting, use mixture of cerium oxalate, chloretone and bismuth subnitrate, and where excessive diarrhea, use 1 dram or more of bismuth with phenyl salicylate and albumin tannate. 6. Where marked inanition: Gradually increasing doses of thyroid extract for a few weeks. Eliminate intestinal parasites where present. *Leroy.* 356

Pharyngitis. TREATMENT. Where swollen lateral bands alone present, paint them with zinc chloride solution (gr. xv-f℥j) or touch with galvanocautery. "Nervous cough" is often kept up by swelling of the lateral bands; these should then be painted gently with deliquescent trichloracetic acid, followed by brushing with sodium carbonate. *Grant.* 363

Placenta Prævia. TREATMENT. Absolute quiet, rupture of membranes when required, and irrigation with hot water recommended. Water should be at 45° to 48° C. (113° to 118° F.), and at least 7 or 8 liters of it should be used. Repeat irrigation if necessary to check hemorrhage. Seventy cases thus treated without a death. Infection from tampon and mishaps in version or introduction of bag thereby avoided. When hemorrhage arrested, spontaneous expulsion of fetus to be patiently awaited. Instrumental dilatation contraindicated. *De Bovis.* 44

Pleuritis. DIAGNOSIS. X-ray studies showed that location of fluid in chest in serofibrinous pleurisy depends upon the position assumed most constantly by patient during acute stage, and that exudates of this type are but slightly, if at all, mobile. These facts are of assistance in differentiation of serofibrinous from other varieties of effusion. *Engelbach and Carman.* 106

Pneumonia, Lobar. TREATMENT. Creosote inhalations and moderate bloodletting, especially with leeches, recommended. *Beverley Robinson.* 47

Stock pneumobacterins, in doses of 25 to 600 millions, used in 20 cases, with 15 per cent. mortality; 30 other similar cases, under usual methods of treatment, showed 40 per cent. mortality. In some of the cases, strikingly prompt benefit followed use of bacterins; in others results were less marked or *nil.* Results seemed more definite with the larger doses. Dosage can be adjusted according to clinical phenomena; where malaise, headache, chilliness, or definite rigors, with rise of temperature, follow an injection, it is unwise to increase dose. *Robertson and Illman.* 107

Intramuscular injections of quinine and urea hydrochloride used in 192 cases of lobar

and lobular pneumonia; mortality 12 per cent. Initial dose, 15 to 25 grains (1 to 1.6 Gm.), repeated in three or four hours, and perhaps once or twice again in first twenty-four hours. Same plan on second day of treatment, and on third, if necessary. Smaller doses, 5 to 10 grains, then sometimes continued by mouth. Results: Temperature and pulse rate gradually fall, respiration more rapidly; termination by lysis in five to twelve days. Procedure in injecting: Paint skin with iodine tincture, fill syringe with 50 per cent. solution of the quinine salt in sterile water; inject deeply into a muscle, emptying syringe thoroughly; withdraw needle, and seal puncture with collodion; no local ill results. Additional treatment: The usual hygienic and drug measures; saline infusion; sodium bicarbonate or ammonium compounds in sufficient amount to keep urine alkaline; tincture of ferric chloride when quinine withdrawn. *Solis-Cohen.* Page 235

In cases with blood-pressure below 110 mm. Hg and other symptoms of vasomotor paresis present (pulse soft, cyanosis not prominent, extremities warm), epinephrin in 10-minim (0.6 c.c.) doses of 1: 1000 solution should be given intramuscularly, even before signs of pulmonary edema appear. If latter develops suddenly, give 15-minim (1 c.c.) doses every twenty minutes for 4 to 6 doses or until the symptoms are controlled; repeat series of injections later if required. In pulmonary edema accompanying dilatation of heart due to toxic degeneration of muscle or added to the myocarditis of old persons, however, epinephrin will accentuate the dilatation, and is contraindicated. These cases are differentiated by fact that blood-pressure is high,—125 to 170 mm.,—cyanosis is marked from the start, extremities are cold, first heart-sound loses muscular quality, and pulse is small, of high tension, and irregular in frequency and size; physical examination may reveal cardiac enlargement, with descent of apex. *Brown.* 297

Pneumoperitoneum. DIAGNOSIS. In presence of free gas in peritoneal cavity, there occurs a concentric diminution of area of hepatic dullness, *i.e.*, dullness disappears at same time from upper border of liver downward and from lower border of liver upward. In tympanites, on the other hand, liver dullness disappears from below upward only. This distinction found useful in early diagnosis of perforation in typhoid fever. *Berg.* 108

Pneumothorax. DIAGNOSIS. Positive coin test, displacement of heart, and, in right-sided cases, displacement of liver are the most important diagnostic signs, occurring in about 90 per cent. of cases. Succussion splash and metallic tinkle occur in 30 or 40 per cent. *Cruice.* 46

Poisoning by Acids. TREATMENT. Case of sulphuric acid poisoning reported in which, when patient comatose, intravenous injection of 300 c.c. of a 5 per cent. solution of sodium carbonate caused immediate return of consciousness. Ultimate recovery. *Marchand.* 357

Poliomyelitis, Acute. ETIOLOGY. Poliomyelitis is propagated by dust. Nasopharynx is probably point of entry. *Neustaedter and Thro.* 46

DIAGNOSIS. Lumbar puncture shown to be valuable in distinguishing poliomyelitis of meningeal type from acute cerebrospinal meningitis. Negativity of cerebrospinal fluid in poliomyelitis diagnostic; in meningitis, fluid shows marked turbidity, coarse clot formation, great excess of albumin, copious deposit of polymorphonuclear cells, and meningococci. *Forbes.* 46

Importance of thoroughly cleaning out alimentary canal at earliest period of disease emphasized; copious enemata high up found useful. Retention of urine may also require treatment with warm baths, hot compresses to abdomen, or, ultimately, catheterization. *Bogardus.* 175

Postnasal Catarrh in Children. TREATMENT. If condition acute, paint throat several times daily with boroglyceride, or, in older children, spray with a ¼ grain to the ounce solution of tartrated antimony while patient inspires deeply. Later, add an equal amount of glycerite of tannin to the boroglyceride. Where painting throat resisted, instill into nostril several times daily, while child lies back with head on pillow, a solution of 5 to 10 grains of resorcin to the ounce of saline solution, 10 grains of boric acid to the ounce of water, or 15 grains of sodium bicarbonate to the ounce. As redness of pharynx fades, apply pure glycerite of tannin or a paint of 12 grains of iodine and 15 grains of potassium iodide to the ounce of glycerin, with 5 drops of oil of cinnamon or peppermint. After all redness gone, use an astringent iron paint of 1 dram of the stronger iron perchloride to an ounce of glycerin. For anorexia: an iron tonic; stay in country or at seaside. Keep child well protected from cold for some time after. *Eustace Smith.* 34

Pruritus. TREATMENT. Venesection to the extent of 100 or 200 c.c., followed by injection of 300 to 700 c.c. of 0.9 per cent. sterile salt solution through same cannula, found to relieve itching at once, with subsequent cure or marked improvement. Procedure repeated 3 to 6 or more times, at intervals of five or six days. No untoward effects. *Simon.* 365

Pruritus Ani. TREATMENT. Idiopathic pruritus ani believed to be caused by streptococcic infection of skin. In 8 cases treated with autogenous vaccines made from organisms on skin, results were excellent, itching disappearing or growing less after 4 or 5 injections. *Murray.* 359

Psoriasis. TREATMENT. Put patient in warm bath (98° F.), to which, if skin tender

and irritated, chamomile and bran or washing soda are added. Rub skin slightly once or twice with green soap, wash off, and remove scales. Next wash with 1: 1000 mercury bichloride, then tar skin well with: Olei rusci, olei fagi pinguis (fresh), of each, 20.0 (3v); alcoholis diluti, 10.0 (3iiss). Patient then remains in bath twenty to thirty minutes, after which tar is washed off and affected parts treated with: Acidi salicylici, 1.0 (gr. xvj); sulphuris præcipitati, 4.0 (3j); zinci oxidi, amyli tritici, of each 1.0 (gr. xvj); petrolati, 25.0 (3vj). Dust talcum powder thickly over parts. Two days later, apply a 10 per cent. ointment of pyrogallol in hydrated wool-fat, followed by talcum, and after two days more, a 25 per cent. ointment of chrysarobin. For psoriasis of face, use following formula: Unguenti hydrargyri ammoniati, pyrogallolis, of each, 1.0 (gr. xvj); unguenti zinci benzoatis, q. s. ad 25.0 (3vj). For psoriasis of scalp, wash with 1: 1000 mercury bichloride. Internally, give phenol and arsenic trioxide in separate pills, to be continued for a longer time than local treatment. Hygiene: Plenty of fresh air and rest. Bland diet, avoiding meat and alcohol, at least for a time. *Bernheim.* Page 327

Psychoses. TREATMENT. Seven cases—4 in children—reported in which pronounced mental disturbances were shown due to dental impaction, alveolar abscess, or other conditions affecting teeth, and cure or great improvement resulted upon remedying these states. Importance of X-ray examination of teeth and jaws in psychoses emphasized. *Upson.* 129

Puerperal Sepsis. TREATMENT. Intravenous injections of mercury bichloride used in 11 cases, with 6 recoveries. Measure considered worthy of trial in severe cases. Twenty drops of a 1 per cent. solution injected once or twice daily; 1 to 4 grains of bichloride used during the treatment. Precautions necessary: 1. Teeth to be carefully cleansed. 2. Salines to be omitted during treatment. *Stowe.* 110

Outdoor treatment of severe puerperal infections found usually to bring about rapid improvement and to lower mortality by nearly 20 per cent. Sunlight as important as air. Patients kept out of doors on a wheel bed, to be moved in again when necessary. General condition strikingly well maintained in the prolonged pyrexias. Other measures: Iron, arsenic, strychnine, alcohol, fluids copiously by mouth, saline enteroclysis in severe cases, alcohol and cold sponge-baths for pyrexia, hot or cold applications for abdominal pain and distention. Curettage contraindicated, increasing mortality 10 per cent.; local treatment to be limited to a single intrauterine douche of sterile salt solution. *Yaung and Williams.* 236

Quinsy. TREATMENT. Early probing advocated, in order to drain pus accumulation at its inception. With aid of reflected light and tongue depressor, tonsillar fossæ, especially upper ones, are entered in turn by means of a tonsil slitter or probe. Where bottom appears soft, rounded point of instrument is pushed deeper into tissues, capsule pierced, and peritonsillar space entered. The small amount of pus thus evacuated gives a sense of relief and infection stops. This can be carried out in about 8 out of 10 cases. It is practically painless and bloodless. *Schuster.* 360

Raynaud's Disease. TREATMENT. Apply liquid ichthyol in 10 per cent. strength locally. Internally, large doses of potassium iodide are very beneficial. Rest in bed and hot applications of some antiseptic solution to the affected members are useful. Where gangrene, amputation may be all that is necessary, but healing is tedious. *Beck.* 298

Renal Traumatism. TREATMENT. After crushing injuries of renal substance spontaneous repair is usual. Operation should not be done unless there is evidence of intraperitoneal leakage, progressive hemorrhage, urinary extravasation, or sepsis. *Babcock.* 257

Rheumatism, Acute Articular. TREATMENT. *Streptococcus pyogenes* vaccine used in 6 cases, in 4 of which no salicylates were given, with good results. Temperature quickly fell in every case, pain ceased, and inflammatory phenomena disappeared. Stock vaccine from several strains of streptococcus used in these cases, but author thinks it preferable to employ a mixed streptococcus and staphylococcus (*aureus* and *albus*) vaccine. *Wolverton.* 48

Rheumatism, Chronic. TREATMENT. In rheumatic conditions associated with anemia and in sore throat of rheumatic origin, following mixture recommended: Dissolve 1 dram (4 Gm.) of sodium salicylate in 2 ounces (60 c.c.) of water. Add liquor ferri perchloridi, plus an ounce of water, giving dark purple mixture. Then add 1 dram of potassium bicarbonate dissolved in 1 ounce of water, and fill up bottle to 8 ounces with water. *Drinkwater.* 51

Lime-poor diet found useful in certain forms of subacute and chronic arthritis, especially deforming arthritis, cases with joint pains following acute polyarthritis, and cases of chronic spinal ankylosis. Cases should be selected by test-diet, to make sure of calcium retention, as other patients will not respond to the treatment. Articles of food allowed in lime-poor diet: White or aleuronat bread, rice, tapioca, wheat flakes, sago, tomatoes, mushrooms, white of egg, meat bouillon, beef, calves' liver, tongue, sweets, vegetable fats, light beer, carbonated waters, port. Distilled water to be used in preparation of food. After six or eight weeks restrictions may be somewhat relaxed. *Hirschberg.* 110

Combination of sodium citrate with salicylate recommended: Sodii citratis, 30 Gm. (7½ drams); sodii salicylatis, 20 Gm. (5

drams); aquæ, 120 Gm. (30 drams); one teaspoonful in a cup of hot water half-hour before each meal and at bedtime. *Homeneay.* Page 417

Rhinitis, Chronic. TREATMENT. To clear and moisten nasal passage, following formula useful: Sodium chloride and salicylate, of each, 45 grains (3 Gm.); sodium borate and potassium chlorate, of each, 96 grains (6.5 Gm.); glycerin, 1 dram (4 c.c.); water, 6 ounces (200 c.c.). Two teaspoonfuls of this are to be added to 1 ounce of warm water and used to spray or sniff up nostrils occasionally. When fetor present: Phenol, 1 grain (0.06 Gm.); sodium bicarbonate, 4 grains (0.24 Gm.); warm water, 1 ounce (32 c.c.). To dissolve away purulent discharges: Sodium sulphate, 20 grains (1.3 Gm.) to the ounce. Where recurrent catarrh due to intranasal irregularities, remove latter. If surgery inadequate, use vaccines, and if sinusitis present wash out sinus daily for a week with a warm antiseptic solution. Where discharge accumulates in nasopharynx, use mixture of menthol, 10 grains (0.6 Gm.), and spirits of wine, 1 dram (4 c.c.) to 1 ounce (30 c.c.) of water, 1 dram of which is placed in ¾ pint of nearly boiling water and the vapor inhaled through mouth and exhaled through nose for ten minutes every two hours. Discharge may be thinned and partially removed by sniffing up nostrils a warm antiseptic alkaline lotion, after which an ointment of menthol, 4 grains (0.25 Gm.), and eucalyptol, 20 minims (1.25 c.c.), to 1 ounce (32 Gm.) of yellow petrolatum may be used. *Stuart-Low.* 422

Rhus Poisoning. TREATMENT. Aluminum acetate solution recommended for local application (*v.* Furuncle). *Stansbury.* 227

Ringworm of Scalp. TREATMENT. Ionic method of introducing antiseptics into tissues advised in preference to X-rays, which occasionally lead to permanent alopecia. Drugs used: mercuric chloride, 1 per cent., or aqueous iodine solution, 1 per cent. Lint soaked in solution is applied evenly to surface and secured by a bandage. Copper gauze used as electrode. Other pole of electric supply is attached to water bath in which child's arm or foot is immersed. Increase current slowly to 15 or 20 milliampères and continue for forty-five minutes. Sittings 2 or 3 times weekly; average total number, 13. Continuous series of 53 cases cured. Have head washed daily with sulphur, betanaphthol and green soap mixture. *Riddell.* 360

Sciatica. TREATMENT. Where acute attack, in spite of the usual measures, persists longer than ten to fourteen days, sulphur baths or hot carbon dioxide baths (102.7° to 104° F., and lasting twenty minutes) should be employed, or heat applied in other ways. If ineffective, author counsels treatment by injections of saline solution and air: 1. Injection of 800 to 1000 c.c. of air, filtered through cotton, under skin on outer aspect of leg. 2. Injection of 60 to 80 c.c. of 0.8 per cent. salt solution, with 0.01 to 0.02 Gm. of novocaine added, just below sacrosciatic notch, as close to nerve as possible. 3. Injection of 10 to 20 c.c. of salt solution, with 0.01 Gm. of novocaine into epidural space of inferior lumbar region, needle being passed in and up through coccygeal notch; preliminary anesthesia of course of injection with novocaine. 4. Where very severe pain and contractures of lumbar muscles, injection of 10 to 15 c.c. of salt solution between third and fourth lumbar vertebræ into epidural space. Injections to be repeated at intervals of three or four days, substituting 1 to 1.2 per cent. for 0.8 per cent. saline. Two to five series of injections cure obstinate cases. *Sicard.* 114

Semilunar Cartilage of Knee, Dislocation of. TREATMENT. Mold piece of sole leather 4 inches long and 1¾ inches wide to inner side of knee, first soaking it in water and cutting edges smooth. Fasten over the displaced cartilage by adhesive straps—2 vertical, 1 horizontal, and 1 oblique—and cover with fairly firm bandage. Patient may walk as usual, notwithstanding soreness. Bandage renewed every ten days. After 3 such treatments condition is well, an aseptic adhesive inflammation having taken place, and only a bandage need be used. *Chandler.* 171

Sinuses. TREATMENT. Following paste used with success in treating a discharging sinus in a breast cancer, after Beck's paste had failed: Bismuth subnitrate, 30 Gm. (1 ounce); petrolatum, 60 Gm. (2 ounces); white wax and paraffin, of each, 5 Gm. (80 grains), and iodine tincture, 2 Gm. (30 minims). The tincture is added after other ingredients mixed. Paste to be stirred when used. Where large amount to be employed, diminish proportion of iodine. *Green.* 177

Small-pox. TREATMENT. Mixture of 10 per cent. iodine and 90 per cent. glycerin painted over pustules 2 or 3 times daily in 85 cases; caused drying of lesions and arrest of tissue destruction, and prevented pock-marks. Pustules on face may be opened with sterile instrument and touched with iodine tincture. Desquamation frequently almost completed in four to six days. All cases recovered. *Rockhill.* 115

Splanchnoptosis. TREATMENT. Simple method of supporting viscera described: Shave hair from lower abdomen; place strip of zinc oxide adhesive plaster 2 to 2½ inches wide by 5 to 6 inches long across extreme lower abdomen; attach to each end of it a bandage of same width to reach around body above iliac crest and be fastened behind; have bandage well padded with cotton. Avoid skin irritation by plaster by removing it occasionally, cleansing skin, and using a dusting powder. Improve general and local muscular tone by means of massage, electricity, treatment of gastrointestinal tract, correct living, and suitable diet. *McCaskey.* 238

Syphilis. TREATMENT. Salvarsan given intravenously in 10 pregnant women in doses of 0.5 Gm. and subcutaneously in 8 newborn infants in doses of 0.03 Gm. Injections in women in dose mentioned found to be not without danger to fetus, pronounced weakening in heart-sounds being noted in days succeeding injection in one-half the cases. Child of a mother given first injection of salvarsan five and one-half months before parturition was born healthy; a child born seventy-two days after salvarsan injection was syphilitic. In the newborn, salvarsan was found to act promptly on pemphigus and to cause disappearance of spirochetæ from lesions; it is capable of producing prompt and lasting recovery from hydrocephalus of syphilitic origin. Smaller doses now advocated by author: 0.2 Gm. for pregnant women, repeated in six days; 0.01 for newborn infants, repeated twice or thrice at six-day intervals. *Bar.* Page 49

Emulsion of salvarsan in lanolin oil found a satisfactory mode of administration in 30 cases. *Burke.* 50

Case of advanced cardiovascular syphilis, in association with greatly enlarged liver and glycosuria, under treatment for nine months, in which, while Wassermann reaction was but slightly influenced, glycosuria disappeared permanently, even though sugars and starches were given freely; liver returned almost to normal size and circulation was greatly improved. *Daland.* 298

Sodium cacodylate used in 43 cases, each patient receiving 14 to 16 injections on successive days. Fresh solution of the drug, 1 in 15 of distilled water prepared daily. Injections at first subcutaneous, then intramuscular. Dosage: 3 grains daily, increased as results noted up to 5 or 6 grains. No untoward effects except, rarely, slight muscular pains or spasm. Conclusion reached: Drug useful in syphilis, giving results not unlike those of salvarsan, though less rapid. Best effects in early syphilis, on initial lesion, maculoroseolar or papular eruption, mucous patches and condylomata; also has an excellent alterative effect. Place patient on mercury immediately after course of cacodylate injections ended. *Spivak.* 362

Best results are obtained by use of salvarsan followed by mercury. Give repeated doses of former, to prevent relapses, making 3 or 4 injections at intervals of about eight weeks, unless relapse occurs earlier, when an injection should be given at once. Exception to this rule should be made where Wassermann is repeatedly negative after first or second injection of salvarsan, and all symptoms have disappeared. Salvarsan does not produce strains of spirochetes resistant to itself, as formerly supposed. *Anders.* 385

Tabes Dorsalis. TREATMENT. Salvarsan administered intravenously in 4 cases, along with hydrotherapeutic measures, with striking improvement. *Holland.* 73

Two cases reported, under treatment for over a year, in which lancinating pains were controlled, muscular inco-ordination improved, and Wassermann reaction became negative. *Daland.* 298

Tachycardia, Paroxysmal. TREATMENT. Attack of tachycardia in a woman relieved as follows: Patient being seated, physician's right hand was placed flat over heart, left hand on back, and patient directed to take deep breath, close glottis, and fix strongly walls of chest. Chest walls were then squeezed with some force, attempting to exert pressure on upper part of heart. Immediate relief and fall of pulse rate from 220 to 110. *Rich.* 233

Tapeworm. DIAGNOSIS. Deep pétrissage of abdomen recommended as aid to diagnosis of tapeworm. Series of circular movements executed by hand in direction of large intestine with enough energy to cause thorough kneading of abdominal contents. Procedure harmless and reveals worms sometimes when purgatives have failed. Three or four fifteen-minute applications of deep pétrissage generally required. Administration of purgatives in cases where contraindicated thus avoided. *Cyriax.* 426

Tetanus. TREATMENT. Phenol injections used in 5 consecutive cases, all recovering; 2 other cases treated with antitoxin died. Ten minims of 10 per cent. solution of pure phenol in sterile water, diluted to 30 or 40 minims, injected deep into muscles, at first every three hours, later at longer intervals as improvement appeared. Injections made into buttocks, deltoids, or pectorals. No untoward results. Urine, however, should be watched for smoky color, as a precaution. Severity of convulsions always diminished by the treatment, sometimes after third or fourth dose. In fully developed cases, second dose to be given one hour after first. Original wound to be excised or cauterized, as usual, with strong solutions of phenol, silver nitrate, or nitric acid. *Kintzing.* 115

Tetany. TREATMENT. Removal of whey from food given to infants with tetany found advantageous. Suspension of curds of wheyless milk proved useful as food. Best prepared as follows: Bring milk to a boil, then cool to 107° F. Add chymogen, 1 dram to the quart, and keep at 107° for half an hour. Strain through cheesecloth and allow to drain an hour. Finally, put curds through fine-meshed sieve, and suspend in a solution of arrowroot flour (1 level tablespoonful to the quart). *Grulee.* 230

Tonsillitis, Acute. TREATMENT. Tincture of iodine applied locally in 400 cases in children, with unusually prompt cures. Also used in pharyngitis, otitis media, tonsillar and nasal diphtheria, laryngitis, stomatitis, etc. For a milder application deep down in throat or in nose, equal parts glycerin and iodine tincture is satisfactory. In acute contagious diseases applications of iodine

tincture to throat are of prophylactic value, combating spread of infection. *Sill.* 171

Brushing with 10 per cent. menthol and 3 or 4 per cent. guaiacol in olive oil often has good effect. *Grant.* Page 363

Trachoma. TREATMENT. Subconjunctival injections of diphtheria antitoxin used in 50 patients, 30 being practically cured and 20 greatly improved. After turning lids, eyes first washed with boric acid and saline solutions, then 1 c.c. fresh antitoxin injected in each lid from within outward. Lids then returned to normal position and another cubic centimeter injected under skin and muscle of upper lid. Inflammatory reaction for thirty-six hours, then disappearance of granules. Three or four such treatments given successively. *Pachopos.* 178

Tuberculosis. TREATMENT. Tuberculin applied locally in 10 cases, comprising suppurative cervical adenitis, anal fistula, and sinuses, with early cures in previously rebellious cases. Parts first irrigated with salt solution, then tuberculin solution sprayed on, or, in sinuses, introduced with syringe and flexible cannula. Mouth of sinus sealed with collodion for several hours. Initial dose must be small; later dose is carefully increased, avoiding general reaction. Locally there is pronounced reaction at first, then stimulation of processes of repair. *Beasley.* 56

Tuberculosis, Laryngeal. TREATMENT. Yeo's continuous respirator will check cough in this condition. Preparation generally used: Creosote, 3iij (12.0); spirit of chloroform, oil of Pinus sylvestris, of each, 3iss (6.0); oil of cinnamon, oil of citronella, of each, ♏v (0.3); menthol, gr. v-x (0.3-0.6). *Grant.* 363

Tuberculosis, Pulmonary. DIAGNOSIS. Hemoptysis occurring without warning in young adults, and unassociated with further signs or symptoms of tuberculosis, is probably of tuberculous origin and should be so treated. Hemoptysis in pneumonia, bronchitis, asthma, or following trauma should lead to suspicion of an underlying tuberculous process. *Bartlett.* 101

TREATMENT. Citrate of iron hypodermically found very efficient in relieving the secondary anemia in 257 cases, 70 per cent. of which were advanced or far advanced cases. Employed routinely where reduction in hemoglobin greater than 10 per cent. Dose, 0.05 Gm. (⅚ grain), injected in buttock. Italian preparations found least irritating. Maximum benefit attained after 30 to 40 consecutive daily doses. *Bullock and Peters.* 32

Comparative study of 146 cases receiving tuberculin and 234 treated by hygienic-dietetic method alone. Conclusion reached that tuberculin is valuable in tuberculosis, especially in moderately advanced cases, and is of special value as a protection against relapse. Autogenous vaccines used in 75 other cases; temperature rapidly returned to normal, expectoration diminished, and hemorrhage was rare. *Petit.* 57

Creosote carbonate, 10 grains in capsules every three or four hours, used with satisfaction in cases of tuberculosis with sudden symptoms of pneumococcic infection (shown by malaise, moderate rise of temperature, followed by bloody sputum and preponderance of pneumococci in saliva). *F. N. Robinson.* 152

Treatment of cough discussed. Facilitate early morning cough with glass of hot water or milk with or without 1 dram of whiskey or brandy, 5 or 10 grains of sodium bicarbonate, or a little Saratoga Vichy. For irritative cough, avoid sources of irritation, such as rapid talking, laughing, smoke, etc.; control the desire to cough. Deep-breathing exercises, change of position in bed, sucking ice, sipping orange juice, demulcent lozenges. Where pharyngeal irritation, use slightly astringent lozenges: Ext. grameriæ, potassii chloratis, ana gr. xv (1); olei menth. pip., ♏j-ij (0.06-0.12); ext. glycyrrhizæ puri, 3iiss (10); ft. in trochiscos no. xxx. Steam inhalations, with 3j-ij of cpd. tr. of benzoin or oil of pine to a pitcher of hot water. Where bronchial secretions abundant: Inhalation from perforated zinc mask (Robinson's inhaler) of 10 drops of equal parts of alcohol, creosote, and chloroform. For pharyngeal irritation, also try sprays of 1 per cent. menthol or pine oil in benzoinol or albolene, or a mixture of equal parts of menthol, camphor, and eucalyptol in 100 parts of benzoinol. For night cough: Warm drink before retiring; warming the bed; cross binder, above and below shoulders and across chest and back, previously dipped in cold water (60° F.) and covered with similar dry cross binder and a flannel jacket; renew in three hours or leave on all night. Strapping chest, where pleurisy. Sometimes counterirritation with iodine tincture or blisters over the apices or other site of irritation. For nervous cough: Bromides in 10- to 20- grain doses, chloral hydrate in 5-grain doses, or a combination of the two. Where wheezing and much secretion: Belladonna tincture, 10 to 20 minims, or atropine sulphate, gr. $\frac{1}{100}$ to $\frac{1}{50}$. Codeine, gr. $\frac{1}{12}$ at first, then $\frac{1}{8}$ or $\frac{1}{4}$ every two hours; heroine, in smaller doses; finally morphine, $\frac{1}{24}$ grain, increased if necessary. For abundant expectoration: Respiratory exercises, change in position, cross binder, and especially creosote inhalation and atropine. *Meara.* 239

Typhoid Fever. DIAGNOSIS. Russo's test found a valuable diagnostic aid in early cases. To 4 or 5 c.c. of patient's urine add 4 drops of 0.1 per cent. aqueous solution of methylene blue. After thorough admixture examine against light; a mint- or emerald-green color is positive, whereas any bluish tint renders test negative. Urines containing bile also give the test; therefore, this must first be excluded. *Rolph and Nelson.* 58

Early recognition of perforation facilitated by observation of concentric diminution of liver dullness. (See Pneumoperitoneum.) *Borg.* Page 108

Careful, repeated leucocyte counts claimed to afford earliest reliable means of typhoid diagnosis for general practitioner. Characteristic leucocytic picture: 1. Leucopenia, progressive, very likely preceded by slight leucocytosis. 2. Initial moderate polynucleosis, lasting first four to eight days. 3. Progressive, marked lymphocytosis, displacing polynucleosis and lasting well into recovery. 4. Increase in large mononuclears, beginning with onset of disease. 5. Sudden, early, and complete disappearance of eosinophiles. *Hultgen.* 116

New test for typhoid fever described: With fine hypodermic needle inject a few drops of suspension of dead typhoid bacilli, made by taking 1 drop of 1000 million vaccine and mixing it thoroughly with 20 drops of sterile saline solution. Inject intradermally and as superficially as possible. Typhoid patient shows absolutely no reaction, while non-typhoid patient shows an area of well-marked redness disappearing forty-eight hours after injection. *Prendergast.* 300

Treatment. Ipecac used in 6 cases with good results. In every case but 1 patient became afebrile within four days. Dose in the earlier cases, 30 grains (2 Gm.) on first evening, diminished daily by 5 grains down to 10 grains (0.65 Gm.); in other cases, 10 grains morning and evening, later decreased to 10 grains once daily; drug was given in salol-coated pills, preceded by tincture of opium to prevent vomiting. *Frazier.* 103

Lumbar puncture twice performed in a case with intense, persistent headache, second puncture bringing relief. *Oddo and Monges.* 178

Uncinariasis. Treatment. Beta-naphthol in 3 doses of 30 grains each at intervals of two hours, followed, again in two hours, by 6 drams of magnesium sulphate, found to expel 97.52 per cent. of total number of hookworms present. Thymol, in same dose, expelled 97.87 per cent., but caused serious constitutional disturbance. A 60-grain beta-naphthol treatment expelled 86 per cent. It was given as follows: Beta-naphthol, 4 drams (16); mucilage of tragacanth, 1 ounce (32); peppermint water, to make 6 ounces (192). *Nicol.* 230

Uremia. Diagnosis. Depression of reflexes and positive Babinski phenomenon found valuable as a very early indication of oncoming uremia. Present in the stage of "preuremia." *Curschmann.* 48

Urethritis. Diagnosis. Improved method of differentiating anterior from posterior urethritis described. Slowly inject 1 c.c. of 0.5 per cent. aqueous solution of basic fuchsin into anterior urethra and have it retained one-half to one minute, with slight massage. Allow fluid to escape and have patient urinate in 2 high glasses. If only stained shreds are present, there is no posterior urethritis; if only white, unstained shreds, infection is in posterior urethra; if both stained and unstained, process is both anterior and posterior. *Wolff.* 118

Urticaria. Treatment. Venesection followed by injection of salt solution proved useful in some cases. (V. Pruritus, Treatment.) *Simon.* 365

Vaccination Site. Treatment. Picric acid applied to vaccinal lesion in 22 children, to harden tissues and prevent local infection. Four per cent. solution in 95 per cent. alcohol painted over and around vaccinal site forty-eight hours after vaccination and daily thereafter. Inflammatory reaction and constitutional disturbance lessened. No interference with success of vaccination. *Schamberg and Kolmer.* 118

Valvular Disease, Cardiac. Diagnosis. To determine whether a murmur is systolic or diastolic when rate is rapid or murmur unusual, make intermittent pressure on radial artery to correspond in time with the murmur; if the finger, pressing synchronously with the murmur, feels the radial pulsations, murmur is systolic; if not, diastolic. *Long.* 167

Varicose Ulcers. Treatment. Stimulate granulations with silver nitrate (30 grains to the ounce), cover ulcer with sterile gauze, and apply long adhesive straps to skin on either side of lesion till skin well wrinkled. Have foot elevated on pillows till it returns to normal size. Change adhesive straps upon alternate days or oftener. Massage and attention to bowels. Linen elastic stockings, put on over white stockings to absorb perspiration, after ulcer cured. *Gills.* 178

Following method found effective in healing ulcers resistant to other forms of treatment: Place patient under deep anesthesia; remove all crusts surrounding ulcer; pour on tincture of green soap and sterile water, and scrub the ulcer with an ordinary stiff brush, previously thoroughly sterilized. Continue scrubbing, washing off *débris* with clean water, until base of ulcer is smooth and edges stand out clearly, red and hard. Paint ulcer and immediate vicinity with tincture of iodine, and apply wet boric or bichloride dressing. Pain generally complained of after recovery from anesthetic, but if bandage is kept moist with warm solution it soon ceases. Granulation soon sets in at many places, and repair is rapid and satisfactory. *Beck.* 300

Vincent's Angina. Diagnosis. Signs distinguishing it from lacunar tonsillitis are: 1. Absence of fever. 2. Pain more localized on affected side, and is severe, lancinating. 3. General malaise and physical exhaustion very marked.

Treatment. First perform gentle curettage of the tonsillar crypt involved. Then apply 12 per cent. silver nitrate solution. *Wherry.* 58

Salvarsan used locally, first in solution, then in powder, in a severe and obstinate case; prompt recovery. *Achard and Flandin.* Page 118

Vomiting of Pregnancy. TREATMENT. 1. Magnesium carbonate, 2 drams; magnesium sulphate, 1 ounce; mint water (1:40), 1 ounce; water, to make 8 ounces; wineglassful to be taken early in the morning. Cascara given daily in small doses for two or three weeks. 2. Simple diet; evening meal to consist only of thin porridge, gruel, or arrowroot. Koumiss; champagne, ½ hour before a meal. 3. Where relief from nausea only obtained after complete evacuation, encourage latter by the sipping of warm water. 4. Absolute recumbency in severe cases. 5. Drugs: Effervescing mixtures, salicin emulsion, phenyl salicylate, compound tincture of cardamom in dram doses, antipyrin or acetanilide with sodium bromide, small chloral and potassium bromide enemata, wine of ipecac in hourly minim doses; validol found most effective drug; menthol, 1 part in 60 of water, with 30 parts of alcohol or brandy, or chloroform (3 to 6 drops on sugar or in water) sometimes useful. 6. Rectal feeding, gastric lavage, laudanum stupes on epigastrium, ether spray, blistering of cervical spine, and ice-bags exert partly psychical effect. 7. Mental therapeutics, in purely neurotic type of vomiting. 8. Massage, electricity, blisters, etc., may help. *Hall.* 119

Whitlow. TREATMENT. Following measures recommended in thecal whitlow: Make preliminary puncture incision to evacuate pus, apply Martin bandage above elbow or knee, and dip affected part in hot Wright's solution. Depths of wound may with advantage be irrigated with same solution at outset, through cannula. When pain alleviated—in a few minutes—remove bandage, insert sufficient rubber drainage, apply gauze saturated with Wright's solution, equalize circulation by compression pad of non-absorbent cotton, and complete dressing with roller bandage and elevation of part. Patient should at home keep dressing moist and warm with the solution (2½ teaspoonfuls of salt and 1 large teaspoonful of sodium citrate in glass of hot water) and apply rubber bandage for thirty minutes every three hours. Inject small dose of polyvalent stock pyogenic bacterins or, where septicemia present, large dose of antistaphylococcic serum. Inject weak iodine solution in lesion occasionally. Later, strive to restore function of parts by massage, passive motion, and if necessary tendon or fascia transplantation. *Skillern.* 420

Whooping-cough. DIAGNOSIS. Edema of the eyelids, especially the lower lids, sometimes appears before the cough and may be of assistance in the diagnosis. *Thursfield.* 97

Wounds. TREATMENT. Nuclein solution found useful to ward off infection in cases of crushed and lacerated hands, burns, varicose ulcers, minor cuts, etc. *Achard and Redfield.* 105

Sodium perborate found useful as a dressing in infected wounds and acute or chronic ulcers. *Herzfeld.* 167

Solution of aluminum acetate recommended for dressing of infected wounds. Made with aluminum sulphate and acetic acid, of each, 300 Gm.; calcium carbonate, 130 Gm.; distilled water, 1000 c.c. For use, dilute with distilled water, 1 to 7 or 10. *Stansbury.* 227

Book Reviews

PRINCIPLES OF PUBLIC HEALTH. A Simple Textbook on Hygiene Presenting the Principles Fundamental to the Conservation of Individual and Community Health. By Thos. D. Tuttle, B.S., M.D., Secretary and Executive Officer of the State Board of Health of Montana. Pp. vii + 186, with 88 Illustrations. Yonkers-on-Hudson, New York: World Book Company, 1910. Cloth, 50 cents; by mail, 60 cents.

In this little book, intended for the school child, the author has set forth the rules for correct living through which the health of human beings, both individually and in the aggregate, can be maintained. Especial attention is given to preventable forms of disease, the aim being to impress the child with the importance of general hygiene in the prophylaxis of disease. The earlier chapters are concerned with clothing, foods, cooking, hygiene of the teeth, pure air, rest, care of the eye, ear, and skin, etc. Numerous illustrations are interspersed, well calculated to convince the child of the value of the hygienic principles referred to in the text. The second part of the book deals with disease germs, the factors predisposing to disease, the transmission of disease by water, air, flies, and other insects, as well as with diphtheria, typhoid fever, hookworm disease, the exanthemata, vaccination, tuberculosis, etc. At the end is an illustrated epitome of elementary human anatomy and an index. The book is well planned and executed, and can be warmly recommended for use in the schools.

PRACTICAL ELECTROTHERAPEUTICS AND X-RAY THERAPY. With Chapters on Phototherapy, X-ray in Eye Surgery, X-ray in Dentistry, and Medicolegal Aspect of the X-ray. By J. M. Martin, M.D., Professor of Electrotherapeutics and X-ray Methods in the Medical Department of Baylor University, in the Medical Department of Southwestern University, and in the State Dental College, Dallas, Tex.; Member of the Texas State Medical Association, American Medical Association, American Röntgen X-ray Society, etc. Octavo of 446 Pages, with 219 Illustrations. St. Louis: C. V. Mosby Company, 1912. Cloth, $4.00.

This is an excellent, medium-sized work on the medical uses of electricity and the Röntgen rays. Written for the student and general practitioner, it deals as simply with the facts as is compatible with completeness and a proper understanding of the subject. Beginning with the "electron theory" in the introductory chapter, the author preceeds in the succeeding chapters to explain the nature of the various electric units, the arrangement and care of battery cells, magnetism and the induction coil, the construction and operation of the static machine and electrical generators, and the workings of X-ray apparatus of various kinds. Much interest is lent to this portion of the book by the excellent illustrations it contains. Next are taken up the methods of applying currents to the human body, and their effects on the tissues, together with cataphoresis, ionization, and electrolysis. Other chapters deal with the uses of electricity in diseases of the nervous system, high-frequency currents, and phototherapy. Finally, there are taken up the medical uses of the X-rays, to which nearly one-half of the book is devoted. Especially complete are the sections on the X-ray treatment of cancerous growths and the diagnosis of fractures and dislocations. A good index concludes the volume.

The well-written text, which includes much useful information from the author's own experience; the conservative and convincing exposition of the therapeutic uses of electricity, the illustrations, and the excellent paper and print combine to render this book a valuable as well as attractive one for the use of the physician or student.

HIERONYMUS FRACASTOR'S SYPHILIS, from the Original Latin. A Translation in Prose of Fracastor's Immortal Poem. Crown Octavo of 58 Pages. St. Louis: The Philmar Company, 1911. Library Binding, Cloth, $2.00.

Fracastor, the author of the original poem, was born in 1483 and died in 1553. He was for a time professor of logic at Padua, but published the poem "Syphilis sive Morbus Gallicus" at Venice in 1530. To him is due the credit of giving to the disease the name "syphilis," which has endured to the present day. Fracastor was still a child when the affection first appeared in Europe. He did not, however, attribute its introduction to the invasion of the French king, Charles VIII, into Italy, but believed that it had existed elsewhere long before.

Though appealing especially to those interested in the history of the healing art, this translation cannot fail to give enjoyment to all who read it. Throughout the work are evident the erudition of its author and his keen appreciation of the importance of the subject. After advancing various hypotheses concerning the origin of syphilis, he describes in considerable detail its symptoms and treatment. Mercury and guaiac are lauded as the chief remedial agents, though innumerable additional plants are also mentioned as being of value. Of interest are the following passages describing the modes of administration of mercury: "At the beginning, mercury was employed associated with lard; later it was combined with the turpentine of Epirus and with the resin of the majestic birch. Certain physicians today combine it with horse fat or bear's grease, or bdellium and with the juice of cedar, others with myrrh, with male incense, with mibium and burning sulphur. For my part, I prefer to alloy it with a mixture of black hellebore, orris root, galbanum, asafetida, oil of mastic, and oil of native sulphur.

"Patients, a truce to the disgust which may be caused by this remedy! For if it is disgusting, the disease is still more so. Besides, your cure is at this price. So, without hesitation, spread this mixture on your body and cover with it your entire skin, with the exception of the head and of the precordial region. Then, carefully wrap yourself in wool and tow; then get into bed, load yourself with bed covering, and thus await until a sweat bathes your limbs with an impure dew. Ten days in succession renew this treatment, for ten entire days you are to undergo this cruel trial whose beneficial effect will not cause you to wait."

The General Field

Conducted by A. G. CRANDALL

Infantile Paralysis

Out of the labyrinth of theories and clinical observations dealing with infantile paralysis, there comes one rather clearly evident observation, viz., that in the early stage of the disease profuse sweating accompanied by fever is the rule.

The most hopeless cases are those in which no real specific treatment is carried out until the dread symptoms of paralysis have made their appearance. When this condition has developed, then the real battle against permanent disability is inevitable. If, however, as seems to have been demonstrated in some instances, specific treatment can be begun before symptoms of paralysis appear, there is a prospect that the degree of disability may be very materially lightened.

All authorities seem to agree upon the one characteristic symptom above referred to. If the constancy of this symptom can be conclusively demonstrated, one point will have been gained in the combat with this modern monster that strikes in the dark.

Getting After the Fly

Gradually, the idea is taking hold of the lay public that the common house-fly is a real public enemy. Only a comparatively few years ago the fly was commended as being a great scavenger. There are changes of fashions in science as in clothes. The activity of the fly in gathering up decayed animal and vegetable matter is no longer regarded as commendable.

The fly carries with him the twin devils of typhoid and tuberculosis, and it is practically impossible that the dangers associated with the house-fly in this respect can be exaggerated.

While it is a policy perhaps calculated to reduce the fly population to a considerable extent to offer cash prizes for the capture of these pests in traps, the direct way to remedy the affliction is carefully to search out their breeding places. A fly, like everything else, has to have a suitable congenial environment to reproduce his species rapidly. Unfortunately, in city and country alike, owing to negligence of people who should known better, many facilities are offered for the rapid multiplication of the house-fly. This phase of the question requires careful attention.

Victims of the Imagination

It is a natural and normal thing that July should be extremely warm and that January should be extremely cold. This is a condition of affairs which affects a great majority of the inhabitants of the western world.

People who dodge the extremes of heat and cold are often surprised to find that they have not thereby gained in physical vitality. Very material changes in the physiological functions occur as a result of extreme heating and the profuse perspiration which accompanies it.

Succeeding generations have endured these alternations of heat and cold thousands of years and it is quite reasonable to expect that it may have become physiological with the present generation to experience these changes of temperature.

If the imagination could be kept under control, physical discomfort resulting from heat would be greatly reduced. The dog is very manifestly affected by extreme heat, yet he continues to take an optimistic view of the situation. If it were within the range of a dog's intelligence to go and gaze pensively at the thermometer, quite likely his sufferings would be much increased. Likewise, the sufferings of humanity, especially in cities, would no doubt be greatly alleviated could the enterprising newspapers be prevailed upon to give less space and headlines to extremes of temperature.

Not So Many Homesick Patients

The general practitioner is more careful where he sends his patients than formerly.

The general practice of medicine is a much more comprehensive term than it was twenty years ago. An intimate knowledge of the patient and his idiosyncrasies, possessed by the family practitioner, may, in many instances, more than make up for any incidental lack of knowledge in special lines.

This does not imply that the patient is a sufferer from this change of policy. It means, on the contrary, that the old reliable family doctor has been rapidly acquiring proficiency, and is thus able in a much larger degree to keep his anxious, worried patient under his own personal direction.

A multitude of invalids have died of homesickness in remote places, or depressed by jarring, discordant conditions surrounding them at some health resort. The "change of scene" argument does not count with the doctor any more, unless the new scene is likely to be in every way congenial. This, of course, suggests the modern sanitarium, which offers as a panacea for possible homesickness skillfully arranged home-like atmospheres with all the diversion and cozy comforts of a well-appointed private residence, together with the special professional skill which justifies the family doctor in his recommendations.

Changing the Baby's Diet

This is the season when the mother of the fifteen months' old baby is apt to get rattled, and when the child shows a diminished eagerness for food concludes that something new should be tried.

Under such circumstances, the baby's guardian angel needs to be on the watch. With the combination of late summer following a long heated term, with high humidity, it is a very easy matter to develop serious indigestion through a little carelessness or sudden change in diet.

When the child's mother becomes thus perplexed, then is the time when she may grasp eagerly at some proprietary food advertised in the daily papers or on the bill boards. It is a fairly safe assertion that if an infant food is to be used at all, that which is placed upon its merits and sold on the doctor's recommendation is a safer proposition than the article which has been placed on the market by advertising to the public direct, thus ignoring the medical profession.

The resentment of the medical profession can be consistently directed toward the food manufacturer who undertakes to spread his wares directly

before the uneducated lay public and passes over as unworthy of his notice the physician on whom the responsibility must fall if the irrationally fed child develops an acute indigestion.

The most competent physician often finds it puzzling enough to decide what to recommend for a child which shows digestive derangement. That system is little short of criminal which ignores the competent, careful physician of experience and permits the mother to act on the merits of an elaborate prospectus sent out over the heads of the profession by some food manufacturer.

Tuberculous Cattle

A correspondent of the *Medical Record* very earnestly recommends that commercial traffic in live cattle be restricted wholly to animals which fail to react from the tuberculin test. He further recommends that each farmer be required to isolate cattle which react, but do not present physical evidence of infection.

There seems to be so much difference in opinion as to what shall be done with tuberculous cattle that as a natural consequence very little is being done. Prominent veterinarians seem to be much undecided as to whether it is safe or not to use for meat the unaffected portions of tuberculous cattle. This fact raises a doubt in the mind of practically all the farming element, and the consumer as well, as to just how much real necessity there is for the propaganda against bovine tuberculosis.

The first essential before reaching an understanding on the care of tuberculous cattle is to come to an agreement as to just how much danger there is in cattle which are apparently healthy, but which react under the tuberculin test. If bovine tuberculosis is easily transmissible to humanity, the restrictions cannot be too severe, but as long as the present doubt exists in the minds of 90 per cent. of the population little will be gained by the ineffective methods now in vogue in most of the States.

To carry out the plans suggested by the *Medical Record* correspondent in their entirety would be to place beef practically beyond the reach of all but the wealthy few. It would also cause the price of good, pure milk to become almost, if not quite, prohibitive from the standpoint of the ordinary consumer.

Preventable Drowning Accidents

Considered from the standpoint of common sense, it would hardly seem necessary that there should be so many drowning accidents at a popular shore resort. If the records could be tabulated, it would be found that a very considerable number of promising young lives have been wiped out within a comparatively few years at one resort alone, viz., Atlantic City.

The principal business of Atlantic City is to entertain visitors. Enormous sums of money are spent there throughout the year. During the bathing season, there should be an exceptional sense of responsibility resting upon the authorities of this resort as regards the protection of the lives of visitors who through ignorance of the currents and general contour of the beach may be unwittingly led into danger. There should be enough life guards constantly patrolling the beach to make further repetition of the harrowing scenes now too frequently occurring an impossibility.

Very heavy responsibilities are assumed by those who provide pleasure for the care-free youths of both sexes. Most of those engaged in conducting the

amusement parks seem to recognize this fact, and serious accidents and fatalities are comparatively infrequent, but at the greatest resort along the Atlantic coast there seems to be an outlay for the protection of visitors entirely out of proportion with the enormous sums expended by these visitors in a town which, left to itself exclusively, would hardly be visible on the map.

What May Some Time Happen To New York

When labor became so entirely unfashionable in Rome that no one could be induced to till the soil, national collapse was not far off.

In this age the cities are acquiring a steadily increasing percentage of those parasites who expect to live in some way without work. New York seems to have achieved the unenviable reputation of harboring about the greatest number of this obnoxious element of humanity to be found in any city on the globe.

A knowledge of the real facts entering into the life of the gambler and the dissolute man about town in a great city takes away the last vestige of glamor and romantic interest. A man in a large city who lives by his wits is found in the majority of cases to be supported in some way by women. Very frequently it is a hard-working wife or sister who furnishes the actual necessities of the bar-room hero, but in far too many instances this type of loafer is profiting by the earnings of some unfortunate woman to whose degradation he has contributed.

Repeated investigations have shown that the political bosses are largely responsible for the protection of this vicious class from the natural consequence of their acts. The political machine which controls the slums of a large city can usually dominate the more respectable element of that city and, as was recently demonstrated at two great political conventions, is able to reach out and exert a powerful influence throughout the country.

Recent developments in New York City have revealed a condition indicating an almost total collapse of the municipal government, at least as regards the control of the vicious element.

Under such conditions as this, the problem of government of that municipality ceases to be a local affair and becomes a national issue. If the country at large must be exposed to the physical, political, and moral degradation constantly oozing from the social conditions of Manhattan Island, it may become necessary, through motives of self-protection, to intervene. When the political machinery of Cuba broke down, it was found necessary on two or three occasions to lend assistance, and certainly by comparison we must admit that "Charity begins at home."

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Original Articles

THE NATURE OF THE CARDIOVASCULAR CHANGES IN NEPHRITIS.*

BY ALFRED C. CROFTAN, M.D.,

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IN attempting to interpret the cardiovascular lesions occurring in association with nephritis, it is important to remember that, on the one hand, many cases of nephritis run their whole course without the appearance of any cardiovascular manifestations whatsoever, whereas, on the other hand, cases of nephritis occur in which increased blood-tension makes its appearance within forty-eight hours after the onset of the renal difficulty and rapidly leads to organic cardiac and arterial lesions that proceed throughout the course of the disease.

One can hardly say that any particular form of nephritis, using the orthodox textbook classification, is accompanied by cardiovascular changes and any other form not. I have gained the impression that it is particularly those varieties of nephritis in which the glomeruli are primarily involved, or in which the glomeruli participate in a pan-nephritis, that become complicated by cardiovascular changes.

It is difficult to explain this sequence of events. Hypothetically one might postulate that the glomeruli are intended to excrete certain pressor principles and that in disease of the glomeruli these principles are retained, high tension and cardiovascular changes being thus produced. But a much more seductive explanation, based on physiological reasoning, is the following: The excretion of urinary end-products through the glomeruli is a true process of filtration and a function of the blood-pressure, or, by implication, of the rapidity of the blood-flow through the glomerular arterioles; whereas the excretion of urinary end-products through the epithelia of the tubules is a glandular process of secretion. In destruction of the glomerular tissue, there-

* Read at the Thirteenth Annual Meeting of the American Therapeutic Society, held in Montreal, Canada, May 31 and June 1, 1912.

fore, any attempt on the part of the organism to compensate for this deficiency implies the production of increased blood-pressure in the remaining intact glomeruli. This is brought about, as a rule, by an increase of the general blood-pressure throughout the body. Such a process, therefore, while conservative and compensatory, and hence useful as far as the renal function alone is concerned, may become deleterious and dangerous in respect of the organism at large.

In interpreting the origin of the cardiovascular changes following nephritis, it is important to establish where and how they arise. The first, the most constant, and the determining feature is high blood-pressure. If this persists for a period of weeks, it is followed, first, by an hypertrophy of the left heart, later by an hypertrophy of the right heart, and, finally, by arterial degeneration.

The increased blood-tension may originate either from the blood itself, from the heart, or from the arteries.

The only factor that could lead to an increase of the blood-pressure through the direct agency of the blood (not including, of course, the rôle of the blood as a carrier of toxic urinary pressor principles) would be an increase in its viscosity, and, hence, in its friction. Viscosity determinations in cases of nephritis accompanied by high blood-pressure have, however, revealed no constant deviation from the normal.

The heart might lead to increased blood-pressure, either by an increase of the systolic volume or by a shortening of the systole. The heart's rapidity is, however, not uniformly increased in the disorder under discussion. Nor is there any evidence to show that more blood is expelled with each systole than normally.

The most rational explanation is narrowing of the arterial lumen, either in some of the large vessels or in many of the smaller ramifications of the arterial tree, or in both. Even slight narrowing of the arterial lumen, *i.e.*, slight arterial contraction, would, according to well-known physical laws, promptly lead to a great increase of the general arterial blood-pressure. I do not believe that this narrowing of the lumen is generally due to organic changes in the vessel walls, at least not in the beginning. It is probable that in many cases the changes are secondary to persistent high tension. Presumably we are dealing with a functional narrowing of the lumen, the result of an increased vasomotor tonus. Vasomotor instability is one of the most characteristic postnephritic manifestations.

All these considerations concern only those forms of cardiovascular degeneration that occur consecutively to nephritis. There remains a large number of cardiovascular disorders in which blood-pressure changes either precede or accompany nephritis. Logically one can distinguish three possibilities, to wit:—

1. The cardiovascular changes precede the nephritis and cause the latter. This, I believe, is the sequence of events seen in true Bright's disease; for in many of these cases high tension is observed to be present long before nephritic symptoms appear. The manifold causes of this high tension need

not be discussed here. A persistent increase in the arterial blood-pressure in this group of cases ultimately leads to degenerative changes, particularly in those organs of the body that are supplied by end arteries, viz., chiefly the brain, the retina, and the kidneys; hence we not infrequently witness instances of high tension accompanied by certain cerebral symptoms and a retinitis "albuminurica," in which the renal manifestations are at first completely absent or only develop at a late period of the disease.

2. The cardiovascular changes develop simultaneously with the nephritis. Here some agency must be operative that affects both the cardiovascular apparatus and the kidneys at the same time. To this category belong chiefly the cardiorenal disorders seen in chronic lead poisoning and, above all, in the so-called "gouty diathesis."

3. The cardiovascular changes are manifestly of renal origin, consecutive to the nephritis and in all probability due to renal inadequacy with retention of toxic urinary pressor end-products. This is the most common sequence of events, and has been discussed above.

It will be seen how important it is from the standpoints of prognosis and of treatment to attempt, in each case of nephritis complicated by cardiovascular disorders, an interpretation of the sequence of events.

DIGITALIS THERAPY.*

By HENRY BEATES, Jr., M.D.,

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Whereas discussion relating to digitalis therapy has been and is commonly limited to that narrower field of its usefulness, the cardiac lesions, your attention will here be directed to a consideration of the value of this drug in that larger and important group of disorders, the nutritional diseases. These have to do with the life and functions of *the cell,* and, therefore, involve problems of the assimilation of pabulum, the conversion of food principles into energy, and what, in a broad sense, is included in the processes of metabolism and function. Pabulum is necessary for the maintenance of cell life, and also for the supply, *to the cell,* of those substances which are to be functionated. The phenomena of kinetic and potential energy and certain problems of physical chemistry and biochemistry have, therefore, to be briefly reviewed in order to refresh our minds with the involved fundamental principles.

Time will be saved and the several associated laws demonstrated by the following quotation from the work of Leonard Hill entitled, "Recent Advances in Physiology and Biochemistry": "Experiments on any form of energy consist in observing the interactions between it and other forms; in study-

* Read by title at the Thirteenth Annual Meeting of the American Therapeutic Society, held in Montreal, Canada, May 31 and June 1, 1912.

ing the nature of the transformer, and of the changes, if any, which occur in it. The structure of the cell must, hence, be taken up from the point of view of its functions, and we must study its chemical and physical composition, the effect of the constituents upon one another, and upon the medium in which the cell lives." To this point, the medium in which the cell lives, attention is especially directed, because those phenomena of the living cell with which the clinician is therapeutically related, in the treatment of the diseases under consideration, center around the chemical, physiological, and biological laws of metabolism and function. Thus, the processes are confronted which are operative in the actions and reactions between substances in solution, and, as the living cell is an energy transformer possessing powers which no other type of transformer does, the fact must be ever remembered that, to employ the words of Hill, "the cell in structure consists of colloids and crystalloids in common solution in water." To quote further, we have to consider "The nature and action of the input and output of the cell, including its secretions and how these are produced; the osmotic phenomena and the effects of changes in the surrounding medium; the characteristic accompaniments of stimulation from part to part, and the effects produced by cells possessing a life in common, as in the multicellular animal.

"Physical chemistry affords us one of the most powerful experimental engines in conducting such inquiries, for the reason that the living cell is in the structure a complex solution of both colloids and crystalloids, and that the chemical reactions occurring in the cell are reactions in solution. Accordingly, although the whole matter is profoundly affected by the fact that the *cell is alive,* it is evident that our knowledge of cellular activities must be based on knowledge of the properties of solutions, both of colloids and crystalloids; of reactions in solution; the velocity of such reaction, and the conditions of the equilibrium; of the mutual effects of crystalloids and colloids upon one another, when in common solution, and of the effects of the *living cell as a peculiar energy transformer upon osmosis and diffusion.*" This somewhat extensive quotation is imposed because there are included several laws and their phenomena which are frequently encountered in nutritional diseases, and upon which are based the principles of treatment.

Many of the phenomena which, upon superficial view, appear to be symptomatic of numerous and even diverse processes are, when more closely observed, found to be based upon a comparatively few fundamental principles. Thus, for example, ulceration and albuminuria are expressions only of degrees of practically but one process, *impaired nutrition* of the involved cells, and the resultant, diminished functional power and local death.

It may be well to allude here to that resistance of cells to adverse influences which renders them, for a time at least, immune to invasion, and to the maintenance of what is so aptly termed "physiological equilibrium," as well as to recall the fact that cells, doubtless, in some manner not yet understood, possess the power of emitting and sending messages to the proper sources calling for the supply of substances necessary for their integrity and life.

It must also be borne in mind that for a cell to be modified in its functionating powers it is necessary that there should enter into it some practically foreign substance. This may either catalytically exert a perverting influence, or, by forming compounds of less or greater degrees of stability, establish relatively easy or difficult dissociation products. Oxyhemoglobin and methemoglobin illustrate the point presented. In syphilis we have another example, and, as is well known, the combination, whatever it may be, of the toxins of the spirocheta with the protoplasm of the cell so alters its inherent functional properties as to cause the nutritional disturbances symptomatic of the disease. Empirically, it is known that, as a rule, unless mercury becomes associated with a syphilized cell, and some combination occurs with its protoplasm which activates an antagonistic influence, the structure is incapable of recovering its normal functions. When it is recalled that, with the exception of the splenic corpuscles and a few perivascular lymph-spaces of the central nervous system, the cells of the body are not in direct contact with the blood, and that structures such as the cornea, cartilage, skin, bone, and ligaments, and organs such as the heart, liver, and kidney, find their source of substances necessary to the life of the respective component cells, as well as those which are essential for function, in what is aptly termed the *intercellular fluid*, we have one of the most important fundamental principles underlying digitalis therapy presenting. Especially is this a fact when it is remembered that the normality of the intercellular fluid *depends upon the mean pressure existing between the arterial system, on the one hand, and the venous, on the other.* Cells, therefore, as environed by this intercellular fluid, are comparable with areas of soil in a swamp.

The intercellular fluid serves three principal offices: (*a*) supplying the cells which it surrounds with substances necessary for the maintenance of cell life; (*b*) supplying the substances essential for the cells to functionate: (*c*) holding in solution the products resulting from the process of cell existence, and also the products of cell function. The reaction of the myocardial cells to the intercellular fluid beautifully demonstrates the phenomena of the physicochemical, biochemical, and physiological laws involved, which constitute the fundamental principles of digitalis therapy applicable to diseases of nutrition. The inherent vital property of contractility of the myocardial cell, after that beat which is the result of its response to the activating influences of the normal intercellular fluid, would not repeat itself if that medium did not almost instantaneously return to normal. It is conceivable that the reaction of the cell to the fluid resulted in the completion of a series of phenomena of a chemical and vital nature. Thus ions from the low molecular formula of crystalloids in solution found the potassium and calcium salts utilized, and, the products of cell action promptly entering the intercellular fluid, while the processes of osmosis and diffusion occurred, in a twinkling the functions of a given cardiac cycle were ready to be repeated because of the *renormalizing of the intercellular fluid*, if it may be thus designated.

The velocity with which these actions and reactions occur, as well as the

specific nature of the involved crystalloids and colloids, constitutes a factor in tissue reactions characteristic of many nutritional disorders. Thus, congestion resulting in an intercellular fluid of either hypotonic or hypertonic properties determines, respectively, retrograde processes, on the one hand, or hypertrophic and hyperplastic, on the other. The reasons for this need not now be further elaborated. Sufficient has been presented to demonstrate that by maintaining a normal blood-pressure, *i.e.*, the circulatory equilibrium, the intercellular fluid must, other things equal, also be so maintained. If this be true, and the fact also that protoplasm and bioplasm are enabled thereby to maintain resistance to pathological influences, and even after being perverted, under favorable conditions, to show recuperative power, it logically follows that the *restoration of lost circulatory equilibrium* is a principle of treatment applicable to a vast field of nutritional diseases.

It must not be forgotten, either, that digitalis itself is a living cell, so to speak; that its inherent properties, like those of the normal living body, are the consequences of physicochemical, biochemical, and physiological laws, and that, like all living matter, it is subject to influences that result in a healthy product or the reverse. This may explain why drug agents offer for sale to pharmacists digitalis leaves varying in price from 40 cents to $1.20 per pound. Such a condition of affairs is applicable to the entire materia medica and is criminal. There should be but one standard of drug. In other words, unless digitalis is cultivated, selected, and the preparations made under scientific and proper conditions and methods, it is, like any living organism, a creature of unreliable and uncertain potentials. Standardized preparations—and fresh ones only, because all rapidly deteriorate and lose strength—should be employed and, what the writer infinitely prefers, active principles of demonstrated therapeutic value. An experience of many years permits of but one conclusion, viz., that, wherever perverted circulatory equilibrium obtains, a digitalin of known reliability, administered in doses of from $\frac{1}{6}$ to $\frac{1}{2}$ grain three or four times daily, will, other things being equal, secure the desired results.

In the following respect this remedy is comparable with a food: Carbohydrates are essential for the maintenance of the processes of life, as are also hydrocarbon and proteid foods, and, since these are utilized, they must be supplied at regular intervals, and in sufficient quantities. So with digitalis. It is, in the sense outlined, a food, and in the nutritional diseases of senility, particularly, it must be "eaten" three times a day, as are our meals, so long as life lasts. Unfortunately it causes gastric derangement in some individuals in whom large doses are necessary to maintain circulatory equilibrium, and in these experience teaches that another derivative, digalen, or soluble digitoxin, proves invaluable. Again, the digalen seems to possess an especial power to restore lost tone of the veins, thus affording, in addition to its activity upon myocardial function, a means of bettering relaxed veins and emptying a turgescent venous system. The digitalin powerfully stimulates the propelling function of the arteries and the vasoconstrictor nerves—factors in lost circulatory equilibrium the actions of which need not be enlarged upon before this body.

It is evident that, in view of the certainty with which the administration of these two derivatives of digitalis (when reliable products are employed) is followed by the restoration and maintenance of circulatory equilibrium, we have in them invaluable remedies for assisting cells to resist the invasion of even the tubercle bacillus, or rather for aiding the infected cells to overcome the pathological condition. The writer has seen otherwise-failing treatment converted into success by adding digitalis therapy to the best *secundum artem* methods. Ununited fractures, ulcers, edema, effusions, and the albuminuria of passive hyperemia have promptly been overcome when, in addition to the usual therapeutic efforts, these remedies were added. The nutritional disorders secondary to passive hyperemia, and in turn the consequence of valvular and myocardial diseases, are in many instances after long periods of digitalis therapy practically controlled.

The reasons or explanations for these results are self-evident, from the brief presentation already given of the principles involved. The relief afforded in the psychical defects accompanying incipient senile cerebral retrograde changes, symptomatically indicated by insomnia, forgetfulness, failing memory, and difficulty of concentrating thought, which, in a word, constitute beginning inability to discharge duties, and so frequently threaten the loss of positions of great responsibility, supplies a group of cases which proves the correctness of the solution of the problems submitted for your consideration. The writer has seen the catheter life of senile vesical paralysis overcome after months of digitalis therapy instituted for the purpose of re-establishing a normal intercellular fluid in the cord, as well as, perhaps, in the viscus itself. That such a result can be secured is proof of the correctness of the position assumed. It goes without saying that, if nutritional disturbance has existed sufficiently long to result in atrophy and death, nothing can be achieved, but if it has progressed only to the degree of "wilted, not withered, leaves," so to speak, restoration of an adequate flow of "sap" will find the foliage refreshed and invigorated: and this achievement is possible in many conditions too commonly regarded as beyond relief. Threatened cerebral "softening," progressive myocardial degeneration, and arterial nutritional disorders have all in the writer's experience been held in abeyance and improved far beyond the conditions obtaining when the patients were first seen. For many years the health and strength thus restored have been maintained by feeding, as with food, sufficient quantities of the two, thus far, best-known derivatives of digitalis already mentioned.

Their administration prolongs the diastolic pause and enables the varied processes of nutrition to take place and the myocardium to maintain its life and functional powers; the propelling function of the arteries—a function the importance of which is not yet appreciated—is greatly reinforced; the intercellular fluid is maintained in its normal condition, and the various physiological laws are afforded ample opportunity to operate, and the cell to exert its peculiar energy-transforming power by means of which that mysterious force, life, determines existence.

RELATIONS OF EAR DISEASE TO SYSTEMIC AFFECTIONS.

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The invitation to address you upon this subject is the more gratifying and gladly accepted in that it seems to mark a gradual abandonment of the false idea that the specialist and his work are quite cut off from the field of the general practitioner. His true position as a pioneer, ever laboring to enlarge that field and to win for his unspecialized colleagues a better control in all the domain of medical practice, deserves wider recognition from both sides than it has yet secured, as well as fuller exemplification on the part of the specialist. In some respects each specialty is an opprobrium to those who profess it, since they have not made their teaching more broad and clear. Too often we have spoken to listeners indifferent, if, indeed, their ears were not obstinately closed. The stethoscope is not the sole scope of the general practitioner—he has need for aural aids besides the best binaural stethoscope.

A few words as to the frequency of ear disease, which the medical beginner, like some of his teachers, considers unimportant. As I set forth in 1888, in the "Address on Otology" before the Pennsylvania State Medical Society, affections of the ear constitute at least 2 per cent. of medical work. Now, as twenty-four years ago, ear cases form 5 per cent. of those treated at the Hospital of the University of Pennsylvania; and more than ever, their proper treatment is often a question of life or death, as well as of preserving an important function. The accusation of non-success can no oftener be justly brought against the aurist than against most of his colleagues; and such measure of truth as it contains is largely offset by recognition of the fact that more than half of our cases are chronic and already beyond the possibility of complete cure when they first come to us. This is sad enough when it is due to the folly of the patients; but what shall we say when it has been the ignorance or the prejudice of their medical adviser which has delayed their coming? Few of our suppurating ears ought to go on to mastoid caries and operation—fewer far, to the more dangerous or fatal intracranial extensions. Yet our records are full of such as must be hurried to the operating table as soon as seen. If this is true of the painful and plainly serious cases, how much more does such apathy in the less urgent conditions delay our opportunity to aid until our best efforts have but a limited chance for prompt or complete success?

I need say little of the intercurrence of ear affections in the exanthems. All know of this and are more or less on the lookout for such in scarlatina and measles. Too few follow, however, the rule which Pepper urged, viz., that the ears should be covered by a protecting cap *before* these patients begin to have pain, discharge, or other symptoms of ear trouble. Often this will serve to bring them safely through with no such ratio of involvement

as one or even two in three, as has been seen in some epidemics of measles. Hot syringing, even upon mere suspicion, will harm none of them, be well within the possibilities of simple nursing, and abort or guide through safely many of the cases in which the otitis is an unavoidable part of the attack, as it doubtless is in such as show the maculæ upon the drumhead in coincidence with the Koplik spots in the mouth. Nor must you forget that typhoid is one of the exanthemata and that diphtheria and pneumonia act in much the same way, if they are not to be so grouped. Aural inflammation in typhoid fever seems to have become decidedly more frequent in the past two decades; but this may be due to the epidemics of grippe rather than, as might be claimed, to the greater vogue of cold bathing. Even the drip into the ear of the condensed moisture from an ice-cap is not without its deleterious effect in provoking the intercurrent otitis of febrile attacks of whatever nature.

A large proportion of acute suppurations of the middle ear affords a pure culture of the pneumococcus; and not only have long series of autopsies in bronchopneumonia of children shown almost invariably pus in the middle ear, but frequently the ear involvement has been notable before any of the pulmonary signs could be found. Typhoid germs may be found in the ear also—sometimes, as with the Klebs-Löffler bacillus, when the diagnosis is otherwise indeterminate. Such discharges may constitute dangerous means of spreading infections, as is clearly understood and acted upon at our Municipal Hospital in relation to the quarantine in scarlatina and diphtheria. In this, as in other respects, the light cases may be by far the most dangerous.

Tuberculosis of the ear may be suspected much oftener than it can be proven to exist. Its course is likely to be rather subacute, and a positive culture, even with the antiformin methods, is rarely possible. The tuberculous perforations of the drumhead are apt to be double or multiple in almost pathognomonic fashion; but they may so quickly coalesce into one large loss of substance that their multiplicity will evade notice. With the von Pirquet and Moro tests at our command, we ought not often to be left in doubt; and as this may be the primary and only site of infection, our treatment should be rather drastic. Yet some ugly and undoubted cases yield to local measures or to opsonic inoculations—so that radical operation may be wholly unnecessary. I have just seen a red-cheeked boy whose carious mastoid had to be cleaned out three years ago, showing suspicious clinical signs of tuberculosis. For a year or more the wound refused to stay healed, while the tissue sent to the laboratory is there specially prized for demonstration of its giant cells. He now seems definitely healed, as have a number of similar cases not always operated upon; but they will all bear watching and extra hygienic care for years to come.

Less generally known is the fact that many young children with suddenly fatal bowel inflammation show advanced but unsuspected tympanic suppuration at autopsy. Granting that some of these had really unrelated or even secondary ear involvement, there yet remains a very significant group of those reported by Ponfick and others in which the enteritis seems surely to have been derived from the infection in the ear, just as in the bronchopneumonia

findings, one of which by Rasch dates back to 1868. As many of these cases, especially in infancy, show little tendency to spontaneous perforation of the drumhead, they are to be recognized only by thorough and skillful study of the ear; and only when such study is far more habitual with the general practitioner than at present will the mortality from this direction be likely to show a reduction.

Much time might be spent upon discussion of the serious intracranial extensions of ear disease, to which one-half of all brain-abscess cases can be ascribed, together with many a puzzling case of generalized septicemia; but it will be better to concentrate attention upon otitic meningitis, as being far more frequent and insidious. Many aurists who have urged and practised routine bacteriological study of ear cases dread the streptococcus in its various forms as causing the most dangerous infection. This may be true in respect to caries and resultant involvements; yet it is the pneumococcus that is probably most often present in the inflamed middle ear and propagates its infection to the meninges. Pachymeningitis and extradural abscess are very unsafe conditions unless surgically dealt with, but simple drainage removes most of their risk. Inflammation of the arachnoid is far more dangerous, although even now we see the dawn of better days for its subjects. Intradural drainage, like the simpler lumbar puncture, has saved a growing list of such patients. Hexamethylenamine by the mouth has freed formalin in the cerebrospinal fluid, as in other body fluids, with slight resultant protecting effect. Yet the more novel measure of injecting this drug even in large dose into the lumbar spinal canal has already saved a notable group of cases and promises still better for the future. As much as 50 grains, in a sterile 10 per cent. solution, seems harmless. Even saline hypodermoclysis can freely flush the cranial cavity and rapidly soak the dressings over a cranial drainage wound; but the more potent yet innocuous germicide can apparently do more, even without any such counteropening. Mere serous meningitis can get well without its aid, were there any reason to fear its employment. Some of the severer and probably purulent forms, when limited, as in the group to the symptoms of which Gradenigo called attention, may recover perfectly under the older alteratives: But in any affection of the meninges attributable to the ear we will do well to trust nothing to chance and "masterly inaction" when such a means of proved efficacy is at hand. It is no panacea, and even the lumbar puncture has its risks; but I expect to use it with increasing frequency and success. Only we must hope that the cases of ear disease which are permitted by ignorance or neglect to pass on to these perilous consequences will become far less common as the practitioner perfects himself in recognizing and forestalling them.

The moral of all this is plain. Otology is not a self-sufficient, narrow specialty, to be neglected by all but a few enthusiasts. There is plenty of work for them in its subtleties and pioneer investigations. The broad lines of its teaching must be brought home to every practitioner. Ear disease constituting perhaps 5 per cent. of the affections coming under the care of the physician, it is at least fair that it should be accorded 1 per cent. of the

time of the medical curriculum—the 40 hours out of 4000 allotted to it by the Committee on Medical Education of the American Medical Association. Men who have not received this needed instruction, as has too often been the case, will only do justice to themselves and their patients by seeking it later.

THE SYMPTOMS, DIAGNOSIS, AND TREATMENT OF TUBERCULOUS LARYNGITIS AS A COMPLICATION OF PULMONARY TUBERCULOSIS.

By FRANK NEALL ROBINSON, M.D.,

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The high percentage of patients suffering from pulmonary tuberculosis who have laryngeal involvement is a fact hard to realize by those not on the alert for its beginning. In the opinions of those who are familiar with the work, this percentage ranges from 75 to 90.

While I do not believe it possible to paint a word-picture of several stages of tuberculous laryngitis, with clear-cut dividing lines, yet my work has led me to make some reasonable divisions, which are plainly evident to the eye trained in laryngeal inspection, and which I have chosen to make in order to classify my own experiences in this affection. If I seem to differ with authorities along this line, it is simply because my work has consisted entirely in watching and treating these cases in the course of pulmonary tuberculosis, as a complication, and not as do a majority of the throat specialists that see them.

Diagnosis and Symptoms.—The classification I have adopted, with the appearance of the larynx in each stage and the accompanying symptoms, are as follows:—

First Stage.—The first stage of laryngeal tuberculosis is difficult to distinguish from a simple catarrhal laryngitis, but I believe it is better to err in a tuberculous patient with a suspicious larynx, and institute a rational line of treatment, than to pass the condition by as a catarrhal affection, make no effort to treat it, and find later that greater infiltration has taken place, with vocal changes.

It has been my experience that the localities which it is of most importance to watch are the interarytenoid space and the false cords, for in these areas I have found the first signs of infiltration to take place in the early stage. While the mucous membrane of the larynx as a whole may be surcharged with blood, these two places show the first signs of infiltration.

In the interarytenoid space there may simply be a slight swelling with an invagination in the center of the mucous membrane, or else a warty or villous growth of varying size, either directly between the arytenoids or lower down, between them and the false cords.

The false cords later become thickened, and punctate areas redder than the surrounding tissues can be seen. These changes, either singly or in combination, I deem sufficient evidence of involvement of a tuberculous nature in a patient suffering from pulmonary tuberculosis. In this stage there is seldom any change in voice, except after exhausting efforts of speech or physical fatigue.

Second Stage.—In the second stage of this affection we find the picture first described exaggerated, and, in addition, the arytenoids and true cords involved. The cartilages of Santorini may be involved, but most frequently both these and the arytenoids show evidence of infiltration.

The cords are of a slaty-gray color and lusterless, and may be streaked with pink, in the body of the cord, with deep injection at the posterior insertion (arytenoid insertion). It is in this stage that we note the first symptoms of altered voice, consisting of hoarseness, with occasional attacks of aphonia, and a severe cough on loud talking.

No pain is present in the first and second stages of this affection, either on swallowing or eating, and no difficulty is ever encountered in the effort to take liquids.

Third Stage.—Here we meet with the disease in an advanced form, with involvement of the epiglottis, at times extending from infiltration to ulceration, and which may end in total destruction.

The arytenoids, interarytenoid space, and true and false cords are all infiltrated. Marked edema of the individual parts accompanies this stage, and pain, both localized and radiating to the ear or ears, is a prominent symptom, with difficulty in deglutition and regurgitation of liquid through the nose on drinking. The latter symptom is more marked if epiglottic infiltration or ulceration be present.

In the ulcerations which take place in this stage, certain areas seem by choice to be affected. On the epiglottis, ulceration takes place at the inferior aspect, and may begin in the form of small ulcers, which later coalesce,—these being superior to the center,—and finally attack the edges of the organ.

On the arytenoids the ulceration takes place toward the interarytenoid space and gradually extends in both directions, *i.e.*, down in the interarytenoid space and up over the arytenoids.

In the case of the false cords, the edges become velvety and later the cord becomes edematous; these signs are soon followed by a punched-out ulceration, with ragged edges, which sometimes undermine the mucous membrane for some distance before they break through.

On the true cords, there appear, before ulceration, small nodes on the edges of contact, of a pearly yellow color. These later become edematous and present the appearance of small water blisters or blebs, followed later by ulcers, resembling small punched-out areas with rough, irregular edges, as though mouse-eaten.

A marked peculiarity in this affection is the contrast between the involvement of the two sides: They are never symmetrical, one side being always much worse than the other. Often, in advanced cases, the true cords are not visible, owing to the terrific infiltration of the arytenoids and false cords.

TREATMENT. A. *Local.*—In all suspicious as well as marked cases, the first principle is cleanliness, and the second, relief of the inflammation and congestion.

I hold the first to be of the greater importance, for it both prevents constant irritation from the accumulation of mucopus in the ventricles and from the cords, prevents reinfection of the already inflamed larynx, and wards off extensive ulceration.

Cleansing is accomplished by wiping the larynx with pledgets of cotton on an applicator. This should be done lightly at first, under reflected light, and with a mirror, until the patient becomes accustomed to it (and it is remarkable how soon he does, and can help the physician by controlling the muscles). Care should be taken to go over the whole surface.

I avoid the use of any local anesthetic in this procedure in order not to have the secondary paralytic dilatation of the vessels to contend with, and follow the cleansing with absorbent cotton by a thorough wiping of the surface with some alkaline mixture such as Dobell's solution or one of its modifications.

This cleansing procedure is followed by the application of one of the albuminate-of-silver solutions, as protargol or argyrol in the strength of 10 to 25 per cent. In making the swab for the silver application, I use a pledget of cotton of fair size, and have it thoroughly saturated with the solution; it is placed as far down below the chink of the glottis as possible, so that when the muscles contract it is squeezed out, and the air from coughing and breathing keeps it spread out over the whole lower surface of the true and false cords.

In addition, I require my patients to wear a cold compress about the neck, at night only, if the case is not severe, but both night and day if it is severe or of the ulcerative variety. The compresses are made from an old soft hand towel or several napkins sewed together. After being wrung out in cold water, they are applied firmly (to exclude air and avoid a chilling effect), but not tightly, to the whole surface of the neck. The wet compress is covered by a dry one, and the whole fixed with safety pins.

To those who have not suffered from a constant irritation of the larynx, it is hard to realize the great benefit to be derived from this treatment, but those who have employed it have only words of praise.

When pain from ulceration is severe, I use a combination of anesthesin and iodine with glycerin in the following proportions, which is applied by means of a cotton applicator:—

℞ Anesthesin ..... 3ij (8 Gm.).
Iodine ..... gr. x (0.6 Gm.).
Alcohol ..... f3j (4 c.c.).
Glycerin ..... q. s. ad f3iij (100 c.c.).

This is placed upon the inflamed and ulcerated surface under reflected light and with a mirror. The duration of the relief of pain from one application varies with the individual and the length of time the preparation has been in use; but usually the effect is of sufficient duration to allow the patient to eat a meal and drink a glass of fluid.

Another combination which I have used with success in these cases and for the same purpose is:—

℞ Propæsin ..... 3j (4 Gm.).
Glycerin ..... f3j (32 c.c.).

This is used in the same manner as the first solution.

I discarded years ago the use of powders of any kind in these cases of laryngeal tuberculosis, for several reasons, viz., they are uncleanly, tend to accumulate in the laryngeal spaces, and absorb the secretions, with the result that they irritate the mucous membrane and become foul smelling in time, from lying in the ventricle. Moreover, they afford a great opportunity for inspiration pneumonia to follow. I have in mind several cases of pneumonia of this character which followed closely upon the beginning of the use of powder insufflations in the larynx, and in which, if these were not the sole cause, they certainly constituted a factor in its production.

B. *Voice Rest.*—Another important feature of the treatment of this affection is "voice rest." It is absolutely imperative that all unnecessary movements of the larynx should cease, and the organ be placed in a position for as complete a rest as possible. While this does not apply with such force to the first stage, all unnecessary talking must be eliminated even here.

In the second stage, whispering may be allowed, with use of the voice for short periods, as improvement takes place.

In the third stage, absolute cessation of even trying to talk or whisper must be enjoined, and writing or finger language used.

While the foregoing constitutes, essentially, the local treatment of tubercular laryngitis, sight must not be lost of the primary factor in the causation of the disease, viz., the tuberculous infection, and in the cure of this there is nothing that takes the place of tuberculin.

That there are cases of primary laryngeal tuberculosis I cannot deny, for they have been reported by reputable men, but I have never seen a case where some lesion of the pulmonary structure, either new or old, of a tuberculous nature could not be demonstrated. In the use of tuberculin in laryngeal tuberculosis complicating pulmonary tuberculosis, sight must not be lost of the fact that we have the primary factor, *i.e.*, pulmonary tuberculosis, to deal with, and must be guided in our dosage not alone by the effect on the secondary factor,—the laryngeal involvement,—but by that on the pulmonary involvement. Therefore, all the signs referred to in a former paper[1] should be watched carefully, and careful daily inspection of the larynx made under reflected light and with a mirror.

[1] Monthly Cyclopedia and Medical Bulletin, Sept., 1911, page 529.

As long as there is no increase in the laryngeal inflammation, as would be shown by augmented redness and injection of the vessels, and providing no untoward symptoms in the lungs show themselves, the dosage of the tuberculin can be increased, but, should any of these appear, the interval between doses must be lengthened, the doses reduced in size, or tuberculin stopped entirely until their subsidence.

Should edema appear in the laryngeal structure, this is to be taken as a signal for increasing the dosage as much and as rapidly as is possible and consistent with pulmonary symptoms. This is the sign to be watched for as an indication that ulceration is about to take place, and ulceration can often be avoided by a rapid increase in the size of the doses as well as a shortening of the interval between them.

Prognosis.—That the opinion of those conversant with this line of work has changed considerably in the last ten years, regarding the prognosis in tuberculous laryngitis, cannot be disputed, for most cases of this character that came under observation before that period were given up as hopeless or were treated with escharotics, such as carbolic acid, etc., which were not only painful, but aggravated the affection. More recently, greater stress has been laid on the treatment of the underlying disease, in consequence of which a greater number have been benefited or apparently cured.

The prognosis in all cases depends on the stage of the disease, both in the lungs and larynx, and above all on the unknown factor, in so many cases, which we term "the individual resistive power."

The later the laryngeal complication appears in the course of a pulmonary tuberculosis, and the more active are the corresponding symptoms, the more grave becomes the prognosis; but all else being equal, all the "first stage" cases (according to my classification) should attain an apparent cure. The same can be said of the "second stage" cases, but with this modification, viz., that about 25 per cent. of the cases in this stage will show an increase of symptoms for a time before going on to an apparent cure.

In the "third stage," from 8 to 10 per cent. can obtain an apparent cure, depending on the amount of ulceration, but the healing is slow. If extensive ulceration has taken place, there are frequent "breakdowns" in the course of healing. New cicatricial tissue forms and then begins to contract: in its contraction it seems to cut off the circulation in the area; edema appears and further breaking down occurs.

This happens frequently in the course of healing, and is discouraging both to the physician and patient. But if perseverance in the treatment is sufficient, the lesion will ultimately heal,—with marked distortion of the structures, in some cases, due to contraction of the scar tissue, until sometimes it is hard to differentiate between structures unless one is familiar with the case.

The point I wish most to emphasize in this paper is the fact that tuberculous laryngitis as a complication of pulmonary tuberculosis is not to be looked on as a hopeless affection, but merely as an aggravation of the primary lesion in the lung, and that it is curable in a large percentage of cases.

THE PROPER TREATMENT OF DIABETES MELLITUS AND ITS CURE BY DIET.*

By LOUIS KOLIPINSKI, M.D.,

WASHINGTON, D. C.

(Concluded from the August issue.)

The correct diagnosis of diabetes mellitus, essential and idiopathic, in man is easy and extremely accurate. The stage, associations, and future of the disease can all be discovered and foreseen.

The blood and urine must contain glucose in excess of that which is at any time transient or accidental. Subjective and objective symptoms of the activity of the disease must also exist. Without these a true diabetes cannot be present.

A glycosuria can be encountered under a great number of conditions of ill health, in the presence of injury, and as a result of the action of drugs and poisons or of an excess of carbohydrate food.

Besides grape-sugar, other sugars may be found. These are prone to lead to error in an incomplete examination. Levulose, lactose, and pentose may be the cause of mistake.

As none of these conditions constitutes true diabetes or has anything in common with it except sugar in the urine, with or without a glycemia, it may be proper to enumerate those most likely to lead to confusion, since if treatment is indicated it must necessarily be different from that here described for true diabetes.

Among these various glycosurias[3] is the alimentary form, due to excessive consumption of carbohydrate or sugar as food and to which various morbid states of the economy predispose, *e.g.*, fevers, chronic disease of the pancreas, brain tumor, hysteria, melancholia, traumatic neuroses, simple trauma, Basedow's disease, thyroid gland medication, delirium tremens of alcoholism, lead colic, carbon monoxide poisoning, obesity, pregnancy, and the use of diuretics.

Glycosurias are also met with in disease and injury of the cerebro-spinal system, in surgical traumatism, in chronic disease, and in many intoxications and poisonings.

Thus, glycosuria may be present in the case of lesions of the cerebral hemispheres, in brain trauma, brain commotion, and injury of the floor of the fourth ventricle, and in excitation of a sensory nerve, as in sciatica, traumatic neuroses, and fractures.

In the insane, in tetanus and hydrophobia, and in poisoning with phlorhizin, chromic acid and chromates, uranium salts or cantharidin (these last noted in animal experiments), glycosuria may also occur.

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* Read at the Thirteenth Annual Meeting of the American Therapeutic Society, held in Montreal, Canada, May 31 and June 1, 1912.

3 R. Lépine: "Le Diabète Sucré," 1909.

Toxic glycosuria with hyperglycemia, the type of which is that produced by epinephrin, may result from hydrocyanic acid, chloral hydrate, chloroform and ether anesthesia, morphinism, alcoholic delirium tremens, mercury, and phosphorus.

In intermittent fevers, anthrax, diphtheria, pregnancy; after attempts at suicide by drowning; in burns of the skin; in Basedow's disease and myxedema; in intestinal worms; in cholelithiasis, glycosuria has also been observed. Alimentary glycosuria is transitory in surgical pancreatic diseases and is not common in acute pancreatic disease.

Various kinds of disease have been found to be occasionally followed by a diabetes, and have therefore been held among its causes. The diabetes in all instances is purely secondary.

The antecedent disease always has its own symptoms and features, as well as its own treatment, imperatively indicated. Though a diabetes may occur, much oftener it is not present; just as often a diabetes insipidus or a transient glycosuria is observed.

The attempt to discover the primary cause of diabetes, rendered more mysterious by animal experimentation, has resulted in the recognition of several types of the disease designated by the organ or part affected.

Among all the various causes of diabetes the following are the most prominent:—

Syphilis of the nervous system, lesions of the cerebral hemispheres with diabetes insipidus, lesions of the vagus and of the sympathetic nerves, traumatism of the head, vertebral column, and abdomen; surgical operations, depressing emotions, hepatic cirrhosis, pancreatic cirrhosis (bronzed diabetes), chronic pancreatitis from pancreatic calculus or obstruction of the duct of Wirsung by a biliary calculus or through cancer of the head of the pancreas, chronic pancreatitis resulting from syphilis or arteriosclerosis, acromegaly, Basedow's disease, and tumors of the suprarenal gland, mainly sarcoma.

In concluding, I would like again to refer to the treatment. In a number of cases of diabetes cured by means of the treatment already described, the previous duration of the malady had been from one month to twelve years. The age varied from young adult life to old age. The majority of the patients were willing and docile after the disease and its pathology had been explained to them and the change from disease to health shown in the urine by the chemical test. In these subjects, followed a sufficiently long time, retrocession was never observed while the diet was being continued. The shortest cures extend over six months, the longest three years. The diet was not found tedious or repulsive. The morbid or childish desire for bread was neither felt nor expressed. In fact, to anyone for whom life has the charm of health, family, friends, pleasure, work, or study, and who has been taught a good working theory of the cause of his disease, even this dietetic treatment has its attractions. Before, too much food was eaten; now, it is a matter of selection and choice. The results described are invariable and extremely precise, and the claim is reiterated with confidence that by this method any diabetic free of terminal disease can be speedily and permanently cured.

DISCUSSION.

Dr. Alfred C. Croftan, of Chicago, in all kindness felt obliged to take issue with a number of the statements made by the reader of the paper. First, in regard to the cure of the diabetic cases described. Dr. Croftan from his personal experience was decidedly of the opinion that a person once a diabetic was always a diabetic. While it might be a simple matter in the milder types of the disease and in symptomatic cases of glycosuria of varying origin to keep the urine sugar-free on a diet low in carbohydrates, it was certainly not an easy matter to do this, and occasionally quite impossible, in the cases of medium severity and in the very severe types of diabetes. The statement of the essayist that the only source of sugar is the carbohydrates of the food was also to be denied; for severe cases of diabetes, even though they remained for weeks and months on a carbohydrate-free diet, still continued to excrete sugar. This sugar would have to be elaborated from the patient's own tissues, and it would often be found that a reduction of the nitrogenous food led to a reduction or a disappearance of the urinary sugar; in fact, it was well established that the albumins of the food constituted almost as important a source of urinary sugar as the carbohydrates. It was exceedingly important in the treatment of diabetes to individualize, to establish the type, the degree, and the category of diabetes or glycosuria that one was dealing with. Diabetes was only a symptom of a variety of underlying causes. Dr. Croftan then described some practical methods of determining the type and degree of diabetes and of making simple tolerance tests for various starchy foods, and fully discussed the equivalent values of the different carbohydrates in the ordinary diet. To keep a patient for an indefinite period upon a strict diabetic diet was decidedly bad practice from several points of view. In the first place it was exceedingly difficult to maintain adequate nutrition for an indefinite period on such a diet. In the second place, the psychic stimulus of appetite so essential to proper digestion was withheld. In the third place, the tendency to acidosis with resultant coma was increased. Even a normal subject after ten to twenty days of a carbohydrate-free diet would excrete acetone and its congeners in the urine, and this acetonuria could be promptly made to disappear by the administration of even small quantities of carbohydrate pabulum.

It should be recognized that in most cases of diabetes it is more important to maintain adequate nutrition, a proper body weight, and a sense of strength and well-being, than to devote all endeavors toward ridding the urine of the last traces of sugar. Most patients, being confronted with the alternative whether to live ten years with a little sugar or one without any sugar, would choose the former option. To paraphrase a noted clinician, it was much more important to know what kind of a patient the diabetes had got than what kind of a diabetes the patient had. The peculiar relation of diabetes with gout and obesity was well established. These three disorders belonged to the same class clinically, pathogenetically, and chemically, for in all three of them, broadly speaking, there was a reduction in the power of destroying the carbohydrates, the proteids, and the fats, and not, as is so commonly claimed, a tendency to an overproduction of these substances. If the normal destruction of the carbohydrates was reduced, then the carbohydrates must accumulate, and hyperglycemia and glycosuria resulted. Where the destruction of certain albumins (nucleins) was reduced, there occurred accumulation of nuclein derivatives (purins), with the manifestation of gout and the uric acid diathesis. Where the fat destruction was reduced, an accumulation of fat in the tissues took place. There were numerous combinations of these different diseases, the most notable one being the obese form of diabetes or the diabetogenous form of obesity. Here the diabetes, one might say, had been existing for a long time, but the sugar, instead of being excreted in the urine, was converted into fat and temporarily deposited in the tissues. Under the influence of a variety of impulses this process became inverted and the fat was rapidly reconverted into sugar, the latter being excreted in the urine in large amount. In these cases the diabetes rarely lasted for a long time. A great deal of fat was lost within a few months

and then equilibrium seemed to become re-established. To place such patients for an indefinite period upon a carbohydrate-free diet was a very precarious matter, altogether unnecessary, and decidedly bad practice.

Dr. Charles E. de M. Sajous, of Philadelphia, said that he agreed entirely with the views expressed by Dr. Croftan. Each case of diabetes had to be studied individually, and he had yet to find five cases which he would treat in precisely the same way.

Dr. Oliver T. Osborne, of New Haven, Conn., said he agreed with Dr. Sajous. He would like to emphasize the danger of acidosis resulting from sudden reduction of the starch diet. It was proper to give the patient a little carbohydrate, for it would not do to make him manufacture sugar out of meats and fats. In operative cases he always loaded the patient up with oatmeal gruel before the operation in order that he might not die of acidosis. The condition of affairs was similar to that met with in the vomiting of pregnancy. He thought, therefore, that one should allow starch in small quantities in true diabetes.

Dr. H. Beaumont Small, of Ottawa, said that, after all, he thought the hearers of the paper might agree with Dr. Kolipinski, who seemed to have excluded from consideration the severer forms of diabetes. In this discussion no allusion had been made to gluten. The difficulty was to get a good gluten flour, as most of those on the market were frauds and delusions. He had found that the production of sugar seemed to be favored by other agencies than starch in the diet. Thus, he had under his care at the present time a diabetic patient, an organist and choir master, who on Saturdays and Sundays, when he was under a mental strain in drilling and controlling his choir boys, showed almost invariably a decided increase in his glycosuria, although no change had been made in his diet. During the rest of the week his urine was free, or comparatively free, of sugar.

Dr. Francis M. Pottenger, of Los Angeles, Cal., said he had had a number of cases of diabetes among his tuberculous patients. One of these had lost his glycosuria entirely when he had the misfortune to be struck on the head with a croquet-ball. The blow had not been a severe one, but it had affected him seriously. He had taken to bed, and, with no change in his diet, the sugar had returned. This patient had died not long afterward from pneumothorax, and maintained his sugar until the end. The points of interest were the loss of sugar as the underlying tuberculosis improved, although the patient was not on a specially restricted diet, and then the return of sugar after the slight injury.

Dr. Osborne said he believed that, next to Dr. Wiley's work in giving us pure foods, impure (starchy) gluten flours had saved more lives than any other agency.

Dr. Kolipinski, in closing, said that he had not been able to eliminate sugar from the urine under the use of gluten bread. Diabetes was undoubtedly one of the most fascinating riddles met with in medicine. The most interesting point in regard to it was the correct diagnosis. True diabetes was characterized by special symptoms, and the observation of much or little sugar in the urine he thought amounted to nothing. He had never had a case in which he could not eliminate the sugar permanently. But aside from the matter of sugar and the associated acids in the urine, it was necessary to watch the patient closely and keep a careful record of his condition, so that he might be kept up to his normal weight, or above it. He would be lost if he should continue to lose weight steadily.

DISCUSSION OF DR. L. H. TAYLOR'S PAPER, "ENTEROSTOMY IN ILEUS."*

Dr. W. Wayne Babcock, of Philadelphia, said that in cases such as those mentioned in the paper the danger of the operation was very great. In a small number of patients in which he had tried to relieve the condition by an appendi-

* See MONTHLY CYCLOPEDIA for July, p. 397.

costomy or by an incision or the introduction of a tube into the bowel, death had been almost invariable. Fortunately, under modern methods, postoperative ileus was rarely seen, as compared with previous years. A simple and remarkably efficient method of treating certain forms of ileus had been suggested to him by two experiences: The first was that of an elderly man who had been treated unavailingly for a number of days for intestinal obstruction. After administration of spinal anesthesia, and as the incision was about to be made, there was a gush of fluid under the operating table which was discovered to be due to a large liquid evacuation. In a second case, an old man had likewise been treated for four or five days, but no gas or solid material passed the bowel; the abdomen progressively became distended, and fecal vomiting was present. Just after the administration of spinal anesthesia, and as the operator reached for his scalpel, there was a gush of fecal material mixed with gas from the rectum, and on pressure upon the abdomen the meteorism disappeared as from a collapsed paper bag. In a recent case, that of a girl who had had no less than 27 abdominal operations, a number of which were for ileus, and with dense intra-abdominal adhesions, a postoperative ileus, which resisted treatment, developed two or three weeks after the operation. Guided by the previous experiences, after an ineffectual trial of the conventional measures, the patient was given spinal anesthesia, and in a few minutes later there was a free passage of gas, fluid, and semisolid fecal material. Spinal anesthesia he believed to be the most potent medicinal agent at present known for the relief of ileus. It cut off inhibition to the bowel, releasing the intestinal ganglia, and at the same time gave a very complete relaxation of the sphincters. There followed, therefore, a marked contraction of the caliber of the bowel and very active peristaltic movements. Repeatedly, in operating in other cases of intestinal obstruction, the speaker had noted an evacuation before the completion of the operation. In certain mechanical forms of ileus he believed that spinal anesthesia would be potent in relieving the obstruction, while all forms of spastic or adynamic ileus would probably be relieved by this simple measure. He advised, therefore, that in postoperative as well as in many other forms of ileus the patient before operation be given the test of spinal anesthesia. If it failed, operative intervention could immediately be instituted. While this procedure was of considerable value for purposes of diagnosis, it should be remembered that it also was effective in forms of inflammatory ileus, such as those due to purulent peritonitis requiring drainage. To be efficient, spinal anesthesia should produce complete anesthesia and relaxation of the abdominal walls. He believed the intradural injection would in the future enable surgeons to avoid many operations for ileus at present considered necessary.

Dr. Taylor said that his cases were not operating-room cases. If they had been taken to the operating room they would certainly soon have been in need of an undertaker, and not a surgeon. They had therefore been kept in their own beds, and operated as promptly as possible. If they were in bad condition, no anesthetic was given at all. The hospital cases of which Dr. Babcock had spoken were anomalies, and not the kind of cases referred to in his paper. The treatment he had described he would advise only in *suitable* cases, and in these relief could certainly be afforded in a fair proportion of instances. He believed that if these patients were operated in their beds much time could be saved and much shock and exhaustion avoided.

Cyclopedia of Current Literature

ACTINOMYCOSIS, VACCINE TREATMENT OF.

A vaccine for actinomycosis was prepared by the authors as follows: Pure cultures of the organism were obtained by thoroughly washing separate granules gotten from the pus in five or six changes of sterile normal salt solution. Each granule was then placed in the bottom of a tube of melted glucose-agar, allowed to develop there at 37° C., and single colonies cut out of the solid medium and transferred to plain bouillon tubes. After a week or ten days the resulting colonies were ground up in a sterile tube, a little normal saline added, and the tube then sealed and kept in a water bath at 60° C. for one hour. After sterilization, the contents were transferred to a bottle containing 50 c.c. of sterile salt solution and 1:400 lysol or phenol.

It being impossible accurately to standardize such a vaccine because the filaments composing the colonies were not evenly broken up, treatment was begun with very small doses—0.1 c.c. of the vaccine subcutaneously. This was repeated every three or four days, increasing the amount 0.05 to 0.1 c.c. each time until 0.75 c.c. had been reached. As with all abscesses, where there were collections of pus incisions were made and drainage established. Eight cases were treated with the vaccine. Of 4 cases of actinomycosis of the jaw and neck, 3 apparently completely recovered, and 1 was rapidly improving. In 1 of 2 abdominal cases, drainage of a large inguinal abscess followed by vaccine treatment for two months yielded an apparent complete recovery. In the other abdominal case there was marked temporary improvement, with ultimate death, while in 2 cases of advanced lung actinomycosis no benefit was apparent.

In actinomycosis of the jaw, the starting point is usually a bad tooth, which should, of course, be removed. Roger Kinnicutt and W. J. Mixter (Boston Medical and Surgical Journal, July 18, 1912).

ACUTE ANTERIOR POLIOMYELITIS, HYPEREMIC TREATMENT OF.

The author describes a plan of treatment having for its purpose to induce hyperemia in the spinal region so as to cause an acceleration of the blood-current in the spinal arteries and overcome the virus which is acting on the cord. The treatment was carried out in 5 cases with most satisfactory results, and is as follows: The alimentary canal is thoroughly cleansed, the limb or limbs lightly bandaged with cotton to keep them warm, and a stimulating liquid diet and strychnine in minute doses given. Bier's dry cups are applied intermittently to both sides of the spine and directly over the posterior processes from the sacrum to the cervical region, for one hour daily, and this continued regularly until muscular soreness has disappeared and voluntary motion in the affected muscles begins to return; the bandages are then removed and massage begun, a general diet being gradually allowed, and the cupping continued.

Where treatment can be begun a day or two after the initial attack, one may look for a diminution of the muscular soreness about the fourth day, and a slight return of voluntary motion about

the tenth or twelfth day, depending upon the extent of the inflammation when treatment was begun and the amount of hyperemia the patient can bear. As the patient becomes accustomed to the treatment, improvement is more rapid; the treatment should be continued until the muscles have regained their tone. The author believes that where this treatment can be applied before the fourth day of the attack it will in many instances prevent paralysis resulting, and in the majority of cases at least insure a useful and serviceable limb. Paul McIlhenny (Boston Medical and Surgical Journal, July 18, 1912).

ALOPECIA AREATA, TREATMENT OF.

In alopecia of the scalp in children the hair should be kept very short in order to facilitate treatment as well as the discovery of new patches. In adults, however, who are particularly anxious to conceal the affection, the hair may be left long.

The entire scalp should be washed weekly with tar soap. Every day the following stimulating preparation should be rubbed in, in order to tone up the scalp and cause it to resist further progress of the affection:—

℞ Aquæ ammoniæ, gr. lxxv (5 Gm.).
Olei terebinthinæ rectificati, f3v (20 Gm.).
Spiritus camphoræ, f3v (150 Gm.).
M. et ft. lotio.

Where, as is often the case, seborrheic lesions are simultaneously present, the following ointment may be used:—

℞ Balsami Peruviani, gr. xv (1 Gm.).
Sulphuris præcipitati, gr. xxx (2 Gm.).
Olei cadini, ♏ lxxv (5 Gm.).
Olei amygdalæ expressi, f3vj (25 Gm.).
Olei theobromatis, 3iiss (10 Gm.).
M. et ft. unguentum.

C. Sabatié (Progrès médical, June 29, 1912).

ANTITYPHOID INOCULATION.

Concerning the use of typhoid vaccine in the treatment of actual cases of enteric fever, there is difference of opinion. From an experience with such treatment amounting to about 50 cases the author concludes that inoculation with typhoid vaccine is a most valuable method of treatment. Small doses did neither good nor harm, but when the dose was increased from 50 to 100 millions every third day excellent results were obtained. The enteric facies disappeared, the patients felt better, and in 2 or 3 instances even asked that the vaccine be repeated. The size of the spleen seemed to be reduced, and the flow of urine increased. As to the temperature, the result of vaccination is to raise it in the following twenty-four hours about 1° F. above that which might have been expected; but it soon falls, to a lower point than before inoculation. About the third day after inoculation it tends to rise again. Another injection is given, and the same result follows. Finally, the temperature touches normal, and remains there. There was in cases treated with the vaccine a very notable absence of severe complications and of tendency to relapse. As to the relative advantages of using a stock or an autogenous vaccine, the author thinks the former gives the better results. As to dosage, one may start at 50 millions and cautiously increase to 100 or 150 millions. Sir W. B. Leishman (Glasgow Medical Journal, June, 1912).

CHLOROFORM ANESTHESIA AND THE ADRENAL GLANDS.

Experiments were performed by the authors upon guinea-pigs which showed that prolonged chloroform anesthesia causes changes involving both the cortical and medullary portions of the ad-

renals. In the former the distribution of the fat is altered, probably also its amount and possibly its nature. After the anesthesia the fat is seen to have spread inward from its normal situation, reaching nearly to the inner reticular zone of the cortex. In the medulla the chromaffine property and the epinephrin are found to have diminished or even entirely disappeared.

In view of the importance of the adrenal glands in the economy, the authors consider it clearly shown by the above facts that alterations in these glands play a part in certain of the fatalities following chloroform anesthesia, as well as in operative shock, the manifestations of which—asthenia and feeble pulse—are symptoms of adrenal insufficiency. Sudden, unexpected deaths occurring in the evening, on the morrow or on the third day after an operation, are frequently attributed to embolism. But a patient succumbing to embolism will cry out, complain of intense pain, or present asphyxial phenomena, sometimes convulsions, whereas in many postoperative deaths no such happenings are witnessed, the patient being frequently simply found dead in the morning and showing tuberculous involvement of the adrenals at autopsy.

For these reasons one of the authors has for the last three years been giving subcutaneous injections of epinephrin regularly to all cases operated. The dose used is 0.0004 Gm. for ordinary operations and 0.0006 Gm. for those involving considerable traumatism. At first the injection was given at the end of the operation, later at the start of the anesthesia. After experience with over 1000 cases this author thinks it justifiable to affirm that the giving of epinephrin in this way is of great advantage to operative cases. It regularizes the narcosis, and it lessens or even in most instances eliminates operative shock. He is also convinced that it is capable of preventing certain sudden postoperative deaths which appear to be due to adrenal insufficiency. Where a patient remains asthenic for twenty-four hours after the operation, further injections of 0.0004 Gm. of epinephrin may be given. Delbet, Herrenschmidt, and Beauvy (Revue de chirurgie, April, 1912).

CHOLELITHIASIS, TREATMENT OF.

According to the author's experience, the following indications for operation in cholelithiasis appear to be established, though the question has nevertheless to be decided in each individual case after careful consideration of all the factors concerned:—

1. Acute cholecystitis should be treated medically; only the most severe form, cholecystitis acutissima, belongs to the surgeon.

2. Chronic relapsing cholecystitis should be operated only when all agencies of medical therapy have failed.

3. Operation is indicated in chronic obstruction of the ductus choledochus if two or three months of medical treatment are without effect. In cases with prolonged remittent fever, rigors, and bad general condition, operation is unquestionably indicated.

4. Hydrops vesicæ felleæ demands operation only if there are persistent and very severe irritative phenomena.

5. Empyema of the gall-bladder and all suppurating processes on the region of the gall-bladder and in the liver demand operation.

6. Adhesions about the gall-bladder should be treated medically so long as the inconvenience produced is not marked. In the most severe cases operation is required.

7. Acute and chronic pancreatitis resulting from cholelithiasis belong to the surgeon.

In the drug treatment of cholelithiasis the author has found salicylic acid of chief value. Sodium salicylate with extract of belladonna he has often found valuable. He does not believe that salicylic acid benefits by its cholagogue action, but that its chief influence is upon the inflammatory symptoms. The best results were seen in acute and chronic cholecystitis, especially with simultaneous rest in bed and the application of hot compresses. In such cases he gives from 2 to 4 times a day a powder of sodium salicylate, 0.5 Gm. (7½ grains), and extract of belladonna, 0.01 to 0.02 Gm. (⅛ to ¼ grain), dissolved in warm water.

The value of the oil cure has not proven very great in his hands. It can be useful only for the simultaneous colitis and spastic constipation not infrequently complicating cholelithiasis.

In severe cases of biliary colic with constant pain and high fever, the author gives calomel in doses of 0.06 Gm. (1 grain) every hour for the first 3 to 5 doses, then every two hours until the first typical calomel stool appears, not exceeding 8 doses a day. Striking results are frequently obtained, though how calomel acts in these cases, as in other liver affections, has not as yet been satisfactorily explained.

Abundance of fluid is very useful for gall-stone patients. The water is best given on an empty stomach, and as hot as possible, cold liquids frequently inducing attacks of colic. All patients should drink in bed about an hour before breakfast 1 to 2 tumblers of hot water, in like manner a tumbler in the evening before retiring, and smaller quantities frequently during the day. Dilution of the bile can also be effected through the rectal injection of water. In Carlsbad enemata of Carlsbad sprudel cooled down from 40° to 50° C. are employed, the patient retaining them as long as possible up to an hour. These injections are especially useful in chronic jaundice, and are also to be recommended where the free use of water by the mouth appears inadvisable on account of a coexisting atony or dilatation of the stomach and where intestinal catarrh is present.

In the dietetic treatment of gall-stone patients, the ordering of frequent but small meals—at least 5 a day—constitutes the first principle. All excess in eating must be avoided, though this should not be so interpreted as to lead to undernutrition. All foods difficult of digestion, or easily decomposed and leading to fermentation, must be forbidden. Food should be taken minced or in purée form, and very cold foods are as much to be avoided as cold drinks. There is no special gall-stone diet, recommendation or exclusion of certain foodstuffs being unjustified unless special gastrointestinal complications, or accompanying diseases such as gout and obesity, require the protein, fat, and carbohydrate to be specially regulated.

Rest is to be insisted upon in the first attack of biliary colic, and the patient should be kept in bed for several days after each attack, even when it passes off quickly and gives rise to no further discomfort.

In cases remaining free from colic for long periods and presenting no inflammatory manifestation or local tenderness physical exercise is one of the most important factors in treatment. Among bodily movements the author lays stress on deep breathing exercises. Certain gymnastic exercises, carefully carried out, are also especially to be recom-

mended. All brisk movements, however, such as severe shaking of the body and heavy lifting, should be avoided. Massage of the liver and gall-bladder is deleterious. Paul Mayer (Lancet, June 1, 1912).

CRAMP OF WRITERS AND TELEGRAPHERS, GENESIS OF.

True occupational cramp, in the author's opinion, is genetically psychological. Analysis of many cases shows it to be dependent upon the pre-emption of the muscles by a tic, which prevents the proper performance of the professional act. The tic is, of course, psychogenetic, and it is the cause of this that must be attacked if treatment is to be successful. The patient's belief in physical causation may be hard to remove; these cases must therefore be frequently seen. The measures used are: (1) Psychic readjustment, so that the patient may understand what he is trying to do. Time may be required to achieve this. (2) Psychomotor discipline in the form of exercises graded by the physician. The temporary physical disabilities from which the notion of incapacity may in the first place have arisen are of minor importance. Psychological reconstruction is the keynote to the treatment. T. A. Williams (Journal für Psychologie und Neurologie, vol. xix, 1912).

CRYPTS OF MORGAGNI, RELATIONSHIP OF, TO RECTAL DISEASES.

The importance of the semilunar or anal valves, also known as the pockets or crypts of Morgagni, in the etiology of various rectal affections is pointed out by the author. These crypts dip down from the rectum beneath the mucocutaneous lining of the anal canal and extend more or less deeply into its caliber.

In many cases of pruritus ani where local remedies and dietary failed to relieve, careful search of the rectal crypts almost always revealed one or more dipping beneath the mucocutaneous membrane to the depth of one-half to one and one-half inches, sometimes burrowing out underneath the skin and sometimes almost surrounding the anus; after excision of these tracts the pruritus disappeared.

A large majority of hemorrhoids originate in this area. Swelling of the veins in the rectal columns causes these to enlarge and lift up the borders of the valves, thus enabling fecal matter to lodge in the crypts and produce irritation. Such a condition, the author believes, is the cause of the so-called "itching pile." He no longer operates for hemorrhoids until he has searched the anal valves to determine whether he has to deal with simple piles or those complicated by cryptitis. Where a small fissure exists between two hemorrhoids it is nearly always connected with the crypts, which, if not laid open, will produce swelling and leave a source of irritation and itching.

In the annoying condition known as chronic spasmodic sphincter, the author has frequently found in the crypts foreign bodies or small ulcers, upon removal or excision of which the pains disappeared.

Some obscure cases of fissure, with dull pain beginning one or two hours after defecation and continuing sometimes a whole day, are also due to cryptitis. By taking a probe bent like a shepherd's crook and searching the bottom of the fissure it may be found to originate in crypts opening high up in the anal canal.

Skin tabs around the anus in almost every instance have a tract, often tortuous, leading down into them from one

of the crypts. Sometimes probing into them with the crooked probe is very painful, at other times not at all so, depending upon whether or no there is ulceration at the upper end of the tract. This explains the fact that simply snipping off skin tabs often fails to cure. Dissection must in addition be carried upward to include the aperture of the valve involved.

Other conditions dependent upon abnormalities of the crypts of Morgagni are so-called "invisible ulceration" of the anal canal, fistula, and a great variety of reflex or sympathetic disturbances, such as dysmenorrhea, amenorrhea, dysuria, mucous urethritis, spasm of the levator ani, neuralgia of the testicles and perineum, priapism, loss of appetite, flatulence, so-called intestinal indigestion, constipation, cardiac palpitation, headache, and ocular disturbances.

In the treatment of diseases of the crypts, cauterization and incision were found useless, recurrence always taking place. The only permanently successful procedure was to pass a bent probe down into the depths of the crypt and excise the latter around it. The probe should have a smooth, round head and be very flexible, so that there will be no danger of penetration of the tissues in case too much force is used. The aperture, sometimes so small that only a very small ear probe will enter, is nearly always between two hemorrhoidal developments in the pillars of Morgagni. A Humphries speculum is the most convenient. Stretching of the sphincter should be done only after the crypts have been excised. A small strip of iodoform gauze should be laid into the tract from which each crypt has been extirpated and a Lynch tube introduced to hold it in place. The tube should be removed in forty-eight hours, but the gauze left until granulation is well established, and it comes away with a bowel movement, which should be induced by a gentle laxative in two or three days. The parts should then be dressed with an ointment of ichthyol, 5 per cent.; argyrol, 15 per cent., and anesthesin, 10 per cent. If there is much aching a wad of gauze soaked in hot water and witchhazel, equal parts, and covered with oil-silk, together with a hot-water bag, may be applied. James P. Tuttle (American Journal of Surgery, June, 1912).

DIPHTHERIA BACILLI CARRIERS, TREATMENT OF.

In a majority of cases of diphtheria morphologically typical diphtheria bacilli will disappear within two weeks after the throat becomes normal, but the number that exceeds this period is considerable and deserves more than passing notice. Especially at times when diphtheria is prevalent are both convalescent carriers and individuals infected by contact but without symptoms important.

Among the various methods which have been utilized for the purpose of hastening the disappearance of the bacilli from the throat, injections of antitoxin have been availed of by certain practitioners, but these are without effect. The method used and advocated by the author is to replace in the mouth the normal bacterial flora which was destroyed during the acute stages of the disease. In several instances in which the swabs from recovered patients gave nearly pure cultures of the diphtheria bacillus for months after the throats had apparently become normal, when antiseptics were discontinued and the throats inoculated from a normal mouth the diphtheria bacilli promptly disappeared. The method employed was to inoculate

a sterile swab from a normal mouth and rub it over the mucous membrane of the mouth and pharynx of the carrier. No mouth wash should be used for at least six hours, and after that time the mouth washes used should not be antiseptic. On the second day a swab should be taken for culture and examination; if positive, the process should be repeated.

The chief objection to this method is the danger of transferring other infections, and this should be very carefully guarded against. When cultured bacterial suspensions are used, this danger is obviated, and, if practical experience should indicate that equally good results may be obtained by the use of cultures, the advantage is worthy of consideration. M. L. Holm (Journal of the Michigan State Medical Society, June, 1912).

DYSENTERY, TREATMENT OF AMEBIC.

The author describes a new method of treating amebic dysentery and hepatitis, consisting of hypodermic injections of soluble salts of the alkaloid emetine. Vedder shows that this substance, the principal alkaloid of ipecacuanha, has the power in high dilutions of destroying amebæ in broth cultures; the author confirms this by testing the effect of emetine hydrochloride on *Entamœba histolytica* in dysenteric stools. When mucus containing numerous active amebæ was placed in the alkaloidal solution, the pathogenic organism was immediately killed and materially altered in its microscopic appearances by a 1:10,000 solution, while after a few minutes they were rendered inactive and apparently killed by as weak a solution as 1:100,000. Administration of emetine hydrochloride hypodermically in a few cases of amebic dysentery yielded excellent results. It did not produce vomiting, even though in the same cases ipecacuanha given by mouth had done so; the alkaloidal salt was at first given in doses of $\frac{1}{6}$ grain (0.01 Gm.), this being equal to 15 grains (1 Gm.) of ipecacuanha. In the later cases $\frac{1}{3}$ grain (0.02 Gm.) and even $\frac{1}{2}$ grain (0.03 Gm.) were given without producing any ill effects on the patient, though their action on the disease was magical. The hydrobromide of emetine might also be given, but it is not quite so soluble as the hydrochloride. An advantage of the method is that the drug can be given even when the administration of ipecacuanha by the mouth is impracticable. Leonard Rogers (British Medical Journal, June 22, 1912).

FORMALDEHYDE AS AN ESCHAROTIC.

Good results from local application of formaldehyde are reported by the author in verruca, clavus, callositas, nævus pigmentosus, and cornu cutaneum. Formaldehyde of 40 per cent. strength was invariably used, undiluted; a wooden toothpick or matchstick was dipped in it and the adherent drop applied to the surface of the lesion, every three or six hours for two or three days. Care was taken not to touch the normal skin with the agent.

After several days, in the case of small excrescences, and in about a week, with the larger ones, an application having been made three times daily, it was found that pain was experienced, devitalization of the tissue occurred, and, upon discontinuance of the applications, the growths desiccated. After exfoliation the under surface or dermal layer appeared free from the blemish, or, if not, another application or two secured the desired result.

If an open sore is produced, the author adds, a healing ointment of zinc oxide or simple cerate is usually all that

is needed. In the case of small excrescences the applicator should be whittled to a fine point. In extensive callosities the remedy can be applied with a brush 3 times daily for several days, or until the surface becomes sensitive; then the applications should be stopped and the parts allowed to dry, when by soaking the epidermis with warm water it can be rubbed off. This process can be repeated until a cure is effected.

In cornu cutaneum the horny growth should be clipped away as near to the dermal attachment as possible and the agent then applied as often and thoroughly as it can be with comfort. Formaldehyde exerts a local anesthetic effect; but this does not protect against its own irritating action. Large and painful warts were, however, removed by its aid with much less pain than attends their removal by other agents; such as nitric acid, zinc sulphate, etc. R. L. Hammond (American Medicine, July, 1912).

GOITER, TREATMENT OF EXOPHTHALMIC.

Endemic goiter should not be treated surgically, in the author's opinion, until proper general treatment has been employed for a long period. Surgical intervention should not be advised in cases of goiter associated with functional or organic disturbances of other secretory organs until the associated disorders have been removed or relieved and relapse then nevertheless occurs.

Medical treatment should be continued from six to twenty-four months. Favorable results should not be promised unless the patient is under the absolute control of a physician, so that treatment by rest, diet, bathing, physical therapy, etc., may be carried out with precision and continuity. Surgical intervention requires the same rigid and prolonged after-treatment to give permanent results. J. H. Musser (American Journal of the Medical Sciences, June, 1912).

GONORRHEA IN GIRLS, TREATMENT OF.

From experience with 300 cases, the authors conclude that for patients in whom the speculum can be used semi-weekly treatments once with 25 per cent. silver nitrate applied to the cervix and 10 per cent. to the vagina, followed by an application of petrolatum, and once by a 25 per cent. paste of iodoform in glycerin, give the best results. This treatment is not improved by the simultaneous use of gonococcus vaccine.

For little girls and virgins with an innocent infection, local cleanliness and the use of gonococcus vaccine give the best results. Because of the tendency to recurrence of the infection, however, this is not entirely satisfactory. In all cases with joint complications, vaccine is of great value. L. Morrow and O. Bridgman (Journal of the American Medical Association, May 25, 1912).

HEPATIC CONGESTION, TREATMENT OF.

Where this condition is the result of heart disease, the venous blood-pressure should at once be lowered by venesection or wet cupping and by drastic or saline cathartics. The patient should take only boiled water for six to twenty-four hours, according to the intensity of the symptoms, then milk diluted with boiled water, and finally milk alone, to the amount of 1½ liters a day. This quantity may be gradually increased to 2½ liters, and administration of digitalis started at the same time. The diuretic action of the latter may be continued with theobromine, of which 3 cachets each containing 0.5 Gm. (7½ grains) should be given daily. To remedy the disturbed hepatic function,

copious intestinal irrigations with cold boiled water, alkalies, saline purgatives, cholagogues in small doses, and tub baths followed by massage of the whole body may be given.

Where the liver is sclerosed owing to cardiac trouble, certain measures will be indicated in accordance with the causative agent. In alcoholics alcohol should be forbidden, and for the tuberculous meat should be interdicted, together with all dietetic excesses. Ferments and intestinal antiseptics may be of great service, together with, in some cases, the ingestion of hepatic substance. When cardiac enfeeblement appears in these cases, digitalis may be replaced by the following combination:—

℞ Extracti ergotæ,
Pulveris scillæ, of each, gr. iss (0.1 Gm.).
Hydrarg. chlor. mit., gr. ¾ (0.05 Gm.).
Pulveris digitalis, gr. ⅜ (0.025 Gm.).
M. et ft. in pil. no. j. Ft. tales no. xxv.
Sig.: One pill three times a day.

In simple hyperemia of the liver in a robust adult, venesection, purgatives, or even applications of the hot iron may be employed. In true hepatic cirrhosis iodine and calomel, the latter in doses of 1/6 to 1/3 grain every morning, need alone be given, in conjunction, perhaps, with hepatic substance. Vires (Journal des praticiens, March 16, 1912).

HERNIA, TREATMENT OF INGUINAL.

It is now generally recognized, according to the author, that acquired hernial sacs are much more uncommon than was formerly supposed, and that many individuals carry with them empty hernial sacs; remains of the funicular process of peritoneum had failed to become obliterated in the course of development. Such being the case, there is a strong possibility that in the presence of a hernia on one side there is an empty or "latent" sac on the other side. It is not uncommon for a person operated on to return later for a hernia on the opposite side of the body.

For these reasons the author has lately made it a rule, when operating upon inguinal hernias in children and young adults, to look for a sac on the other side. Among 18 cases, 10 showed such a sac, varying in length from one-half to two or three inches.

In searching for a latent sac it is necessary to proceed on a definite plan. Where the sac is two or three inches long it is as easily found as in the presence of hernia; but in several cases the sac was found only about large enough to admit the tip of the little finger. The method adopted is as follows: The usual incision is made and the external oblique and external ring thoroughly cleaned up and defined. The external oblique aponeurosis is split up as far as the internal ring, care being taken only to divide the transverse or intercolumnar fibers; the aponeurosis is cleanly separated from the subjacent cremasteric fascia. The latter is then seized opposite the external ring with two Spencer Wells forceps, drawn down toward the pubic spine, and spread out. It is then neatly divided in its whole length. If an ordinary sac is present it is at once seen, but sometimes one finds a collection of yellow granular fat, and on tracing this up to the internal ring discovers a small but very definite sac. If no sac is found after looking in this way one may feel sure that none is present. The external oblique is then repaired with four or five interrupted sutures and the wound closed. This performance adds practically nothing to the risk or severity of the ordinary radical cure, and insures the patient against the possibility of a second operation. E. W. Roughton (Lancet, June 8, 1912).

INFANTILE CHOLERA, TREATMENT OF.

On account of the persistent vomiting, it is best at first not to attempt to administer food, but merely to allow the child to drink as much hot water as he shows an inclination to swallow. The continued application of a weak mustard poultice (1 part to 5 or 6 of linseed meal) to the epigastrium usually helps to control the retching, and, when the vomiting diminishes, one may begin giving a teaspoonful of white-wine whey (iced), to be repeated every twenty minutes or half-hour. If this be vomited, a less quantity should be given, or a return to hot water made. If the stomach can retain the whey, the child may be allowed to take it in considerable quantities, sucking it through the bottle like any ordinary food. If after a few hours there is no sign of sickness, a dessertspoonful of fresh cream may be shaken up in the bottleful of whey. Milk must be forbidden. Obstinate vomiting may often be arrested by washing out the stomach.

To restore to the skin its lost elasticity, the brandy pack is most valuable. If there is little sickness, 15 to 20 drops of nitrous ether may be given every few hours in a spoonful of water to stimulate renal activity. Any sign of exhaustion indicates energetic stimulation. The child must be placed for five or ten minutes in a warm mustard bath, and afterward brandy (10 to 30 drops) administered in a little hot water; the latter measure should be frequently repeated, until the warmth of the extremities is restored. As a cardiac stimulant the author advises strychnine, given hypodermically; with it may be combined 3 or 4 drops of ether. The child must be kept in a horizontal position, and disturbed as little as possible.

If vomiting continues in spite of the measures already mentioned, small doses of calomel, such as $\frac{1}{12}$ grain (0.005 Gm.) with 1 grain (0.06 Gm.) of sugar of milk given every half-hour, will often soon quiet the stomach. If not, one may alternate each powder with a draught containing $\frac{1}{6}$ minim (0.01 c.c.) of creosote and $\frac{1}{2}$ minim (0.03 c.c.) of tincture of iodine in a teaspoonful (4 c.c.) of camphor water, as recommended by Strahan. All the time the mustard and linseed poultice must be kept applied to the epigastrium. For an effect on the intestinal condition the author advises the following:—

℞ Bismuthi subcarbonatis, gr. x (0.6 Gm.).
Sodii salicylatis, gr. j (0.06 Gm.).
Glycerini, ♏xv (1 c.c.).
Aquæ, q. s. ad f3j (4 c.c.).
M. Sig.: To be given every four hours (to a child 6 months old).

A high temperature must be lowered by enemas of water at 80°. Five or ten ounces of normal saline solution may be used at a time, or a smaller quantity given hypodermically, *e.g.*, 2 ounces injected into the loose tissue of the back.

If the case be seen early, before exhaustion has set in, the disorder may be sometimes arrested by giving small doses of morphine sulphate hypodermically. For a child one year old, $\frac{1}{30}$ grain (0.002 Gm.) may be used, combined with 5 or 6 drops of ether, and the injection may be repeated in an hour if the symptoms continue. Afterward energetic stimulation should be given. It is very important to keep the extremities warm. After making a step or two toward recovery, the patient may fall back again into a state of asthenia, which must be combated by mustard baths, stimulating skin friction, hot applications to the front of the chest, and brandy frequently given. A strong mustard poultice, placed for a few minutes over the heart, is often of

service, as well as the subcutaneous injections of ether and strychnine already recommended. Eustace Smith (Pediatrics, May, 1912).

IVY POISONING, TREATMENT AND PROPHYLAXIS OF.

Lead water and laudanum solution, with the addition of ½ to 1 dram (2 to 4 c.c.) of sodium hyposulphite to the ounce (30 c.c.), is recommended by the author as a local application in ivy poisoning. The lead and laudanum solution is made according to the ordinary formula: 4 parts of lead water, 16 parts of water, and 1 part of laudanum; to this the author adds 1 ounce of grain alcohol to the pint. Since the disease is autoinoculable, where the solutions are applied on gauze the parts should be thoroughly cleansed, the dressings removed, and new ones applied daily.

In many cases, the author finds, grindelia robusta acts very well. The official fluidextract of this plant is diluted with from 10 to 15 parts of water and either slapped on frequently or applied with gauze which is kept saturated with it.

Concerning prophylaxis, the author states that the internal exhibition of small doses of rhus toxicodendron is useful in that it brings about immunity to the local effects of the ivy. One dram (4 c.c.) of the tincture of rhus is added to 4 ounces (120 c.c.) of water; of this adults take 1 teaspoonful in a wineglassful of water before meals, while children take 10 to 15 drops of the same solution three times a day. Uniform success in warding off ivy poisoning in those susceptible was had by following this plan. J. C. Attix (Medical World, July, 1912).

LIQUID OXYGEN.

Liquid oxygen is colorless, has a specific gravity of 1.13, an acid reaction, and a temperature of —312° F. Upon exposure to the air, reconversion to gaseous oxygen is very rapid, and, upon application to the skin, freezing results in a few seconds. Results varying from a stimulating chilling and local anesthesia to a freezing with vesiculation of the surface may be obtained by varying the time of application from three to twenty seconds. Added to this is the germicidal action resulting from the use of pure oxygen in its most concentrated form. It is quicker and more positive in action than the freezing sprays already in use; has a much lower temperature than carbon dioxide snow; is more stable than liquid air, and is a germicide that is non-poisonous.

The author has used liquid oxygen in about 40 cases, and observed its effects in a number of others, including furunculosis, suppurating bubo, epithelioma, lupus, ulcers (varicose, traumatic, syphilitic, and tuberculous), gangrenous ecthyma, chancroid, psoriasis, verruca, vascular nevus, and cancer of the tongue. As a local anesthetic the agent can be used in place of the freezing sprays. It is of decided advantage in removing encapsulated pus, as in suppurating glands or cysts that are breaking down; such pus-sacs may be frozen after they have been exposed and the sac and contents removed in a solid mass where manipulation without freezing might result in rupture and consequent danger of infection. In a case of furunculosis of the neck which had opened spontaneously, a single application aborted several threatened infections and practically stopped suppuration in the central lesion. Three suppurating buboes healed very rapidly after being swabbed out with the liquid

oxygen. In a case of lupus the marginal lesions healed more rapidly than under any treatment previously tried, including the X-ray. An epithelioma of the cheek, upon the point of breaking down, was entirely cured with little resulting scar. In about 15 cases of leg ulcers of various types, applications of liquid oxygen very promptly converted foul, indolent sloughs into clean, granulating surfaces. A severe case of extensive tuberculous ulceration of the leg made good progress in healing under its use. In a number of instances warts were removed by a single application.

The liquid oxygen is ordinarily applied by wrapping a pledget of cotton around an applicator, making a ball about the size of the thumb, immersing this in the bulb of liquid, and holding it over the surface to be treated for a period of time varying according to the result desired. Healing surfaces should be protected by a layer of gauze, for the cotton will freeze to the surface if it remains in contact more than a very few seconds. Charles H. Bang (American Journal of Dermatology, June, 1912).

MALARIAL RECURRENCES.

The significance of a recurring malarial infection, the author remarks, lies in that such recurrence is *prima facie* evidence that the original infection was not properly treated and that the patients are not only chronic sufferers, but in addition a constant menace to the community in which they reside. The treatment should be largely prophylactic, and consists of the treatment of the acute stage to a point where the infection is entirely destroyed. If this were consistently carried out it would have an immense effect in the eradication of the disease. In estivoautumnal infections 10 grains (0.6 Gm.) of quinine sulphate three times daily for a period of from two to three weeks results in complete sterilization of the blood. In the benign tertian and quartan infections the dose can be reduced to 20 grains (1.3 Gm.) per day. Tonics, for reconstructing the blood, such as arsenic and iron, should be employed where there is evidence of anemia, as is generally the case in old infections. Skinner and Carson have reported on the efficacy of the application of the X-rays, claiming that splenic pain is relieved and engorgement of this organ reduced if of recent origin. In cases where quinine was withdrawn because of intolerance and the rays used, the clinical symptoms and parasites disappeared and there were no relapses up to the time of writing. Surveyor has obtained good results in crescent infections with picric acid. Graham E. Henson (Southern Medical Journal, August, 1912).

ORCHITIS, HEXAMETHYLENAMINE IN.

The author reports a case of unilateral orchitis, apparently originating by metastasis from primary foci in inflamed tonsils, in which hexamethylenamine was tried because of its well-known bactericidal properties when decomposed within the body. The drug was given in doses of 15 grains (1 Gm.) every six hours, later reduced to 5 grains (0.33 Gm.). What appeared at first to be a severe inflammation of the testicle very rapidly improved within forty-eight hours after the administration of the drug was begun. While definite conclusions cannot be drawn from a single case, the result obtained would seem to justify further trial of hexamethylenamine in similar non-venereal inflammations of the testicle. I. H. Prouty (Journal of the American Medical Association, April 20, 1912).

PERNICIOUS ANEMIA, GASTROINTESTINAL DISTURBANCES IN.

This subject was studied by the author in a series of 58 cases. Loss of appetite was observed in 38 cases, nausea in 27, vomiting in 19, indigestion in 33, diarrhea in 20, constipation in 27, and irregularity of the bowels in 11. The liver was enlarged in 18 instances. Enteroptosis was present in 21 instances and atony of the stomach in 29. Gastric catarrh was present in 9 cases. The gastric contents were examined in 43 cases. In 30 of these there was absence of gastric digestion (achylia gastrica); in 9 the gastric digestion was diminished and in 4 it was normal. In the 30 cases with absence of gastric secretion the total acidity ranged between 8 and 14; in the 9 with diminished gastric secretion, between 22 and 46, and in the 4 with normal digestion, between 32 and 65. The gastric secretion was examined in 5 patients presenting an absence of hydrochloric acid during the period of improvement in the state of the blood as well as of the general health; in none did the secretion return during the stage of apparent recovery.

From a study of these cases of pernicious anemia, it is evident, the author concludes, that a large proportion of cases are attended with gastrointestinal disturbances as well as with an absence of gastric secretion. It is quite probable that the poison which produces the hemolysis is the same as is responsible for the alteration in the gastric secretion. Julius Friedenwald (Boston Medical and Surgical Journal, August 1, 1912).

PNEUMONIA, CAMPHOR IN.

Experimental work on this subject, as well as clinical trials, were carried out by the author. In 20 rabbits inoculated with a fatal dose of pneumococci, death was retarded from two to five days by camphor-oil injections in 8 and entirely prevented in 9. Among 37 cases of pneumonia in human beings, treated with camphor by the author's method, there was but one death. The following conclusions were reached: (1) That 10 c.c. of a 30 per cent. camphorated oil (sesame oil), equal to 36 grains of pure camphor, injected hypodermically to each 100 pounds of body weight every eight to twelve hours, do not produce symptoms of poisoning, in fact are harmless; (2) that proportionally much larger doses are equally well borne in rabbits; (3) that the quantities of camphor mentioned materially assist in overcoming pneumococcic toxemia, and (4) that the earlier the treatment is resorted to the better the results.

The injections are best given on the outer aspect of the thigh. A Luer syringe of 10 or 20 c.c. capacity, without rubber washer, is used. The oil must be sterilized in a large-mouthed bottle with loosely fitting stopper in a boiling water bath, and drawn from the receptacle—not poured—into the sterilized syringe. The point of injection is best disinfected with a few drops of iodine tincture. During the injection the skin, with the subcutaneous fat, must be well drawn up, so that the oil is deposited underneath it. In fat patients the requisite amount may be injected in two localities. In lean persons 20 c.c. can be injected in one place without discomfort. Abscesses are due to imperfect sterilization, and sloughing of the skin to faulty technique. A. Seibert (Medical Record, April 20, 1912).

PNEUMONIA IN CHILDREN, TREATMENT OF.

The experience of the author with cold, fresh air in the treatment of

pneumonia in children has been, he states, very satisfactory, but he cannot say that in each case recovery would not have taken place had it not been used. He feels, however, that desperate cases, showing much cardiac weakness, dyspnea, and cyanosis, should have the benefit of cold air, with abundant covers and a hot-water bottle at the feet.

Continuous stimulation is rarely necessary, proper selection of food, correction of digestive errors, proper action of bowels, and saline enemas being rather depended upon to support the patient and prevent toxemia and its untoward results. The best of all stimulants is strychnine, in doses of $\frac{1}{300}$ to $\frac{1}{60}$ grain (0.0002 to 0.001 Gm.). Oxygen inhalation and digitalis are of little use. Alcohol can generally be dispensed with, but when used in an emergency should be given freely. In some cases with restlessness stimulants do harm, and an injection of morphine, $\frac{1}{500}$ to $\frac{1}{150}$ grain (0.00012 to 0.0004 Gm.), may have a life-saving effect by procuring sleep and sparing the failing heart. Arrhythmia and gallop rhythm are often steadied by ammonium carbonate in the form of aromatic spirits in conjunction with strophanthus (2 minims of tincture) or morphine. Where intense cyanosis, dyspnea, and many râles are present a mustard pack (1 pound of mustard to 1 quart of hot water), followed by the hypodermic injection of atropine, or in some instances nitroglycerin, may be of much service.

Where there is tympanites, an initial purge of castor oil, followed by a few drops of milk of asafetida by the mouth; the careful manipulation of the diet; temporary exclusion of milk, substituting animal broths; colonic irrigation followed by a high enema of milk of asafetida, turpentine stupes, or the Priessnitz compress, with a possible injection of one $\frac{1}{300}$-grain (0.0002 Gm.) dose of atropine, are useful measures.

For stationary high temperature alcohol and water sponges and the application of a covered ice-bag are usually effective. The gradually cooled bath is a most efficient means of lowering high fever. Covered by a blanket, the whole body is immersed in water at 100° to 110° F. and allowed to remain from ten to fifteen minutes, after which the child is received in a dry blanket without drying and put to bed, and an ice-bag applied to the head. Friction is applied during the bath. A gradually cooled (from 100° to 75° F.) colon irrigation will likewise reduce fever, and besides relieve tympanites, lessen toxemia, and quiet the nervous system.

Among drugs for general effect there may be employed, probably with some benefit, quinine hydrochloride, 1 grain (0.06 Gm.) hypodermically; sodium salicylate, ½ to 2 grains (0.03 to 0.12 Gm.); sodium benzoate, 2 to 3 grains (0.12 to 0.18 Gm.); hexamethylenamine, 2 to 3 grains, or quinine ethyl carbonate (euquinine), ½ to 2 grains.

In strong children in the second stage of a diffuse acute bronchitis, with mucus and many râles, or in cases of bronchopneumonia where the same condition prevails and the children are said to be choked up, the author has had much success with the following measures: ½ to 2 teaspoonfuls of castor oil are first given within one to one and one-half hours; 30 drops of ipecac and 15 minims of the wine of antimony are administered every hour until emesis occurs, not more than 3 doses being used; then are given tincture of belladonna in 5-minim doses every four hours, gradually increased to 15 or 20 minims, and aromatic spirit of ammonia, in 5- or 10- minim doses.

Every other hour inhalations of the following are given: Oil of eucalyptus, 4 drams (16 c.c.); beechwood creosote, 4 drams; oil of turpentine, enough to make 4 ounces (120 c.c.). From 1 to 2 tablespoonfuls are added to a quart of water, which is kept boiling in the room for at least one-half to one hour. During the interim the room is ventilated. The diet is kept low, and fever and other symptoms combated on general principles. Stimulation in these cases is rarely needed; if it is, strychnine, quinine, and alcohol are relied on. H. Lowenburg (New York Medical Journal, September 7, 1912).

PULMONARY TUBERCULOSIS, SPECIFIC TREATMENT AGAINST.

Mixed infection being usually present in progressive pulmonary tuberculosis and its complications, the author considers the use of appropriate vaccines essential, either before or conjointly with the administration of tuberculin. In 100 cases treated, autogenous vaccines usually seemed to act no better than the polyvalent vaccines made in the laboratory. Under staphylococcic, streptococcic, or pneumonic vaccine with tuberculin, the catarrhal symptoms due to mixed infection very often abated, and it was also found that colon vaccine acts exceedingly well in many cases complicated with severe bronchitis, even though this organism cannot be isolated from the sputum; severe cough and profuse expectoration disappeared and moist râles cleared up after injections of colon vaccine and tuberculin alternately. The same treatment, after surgical procedure, gave excellent results in cases of ischiorectal abscess; likewise in cystitis and a case of tuberculous appendicitis with abdominal fistula formation. In cases with pulmonary hemorrhage and rising temperature assuming a septic pneumonic type, polyvalent pneumococcic vaccine often did good. In tuberculous adenitis with sinuses, both tuberculin and staphylococcic or streptococcic vaccine are necessary. In a girl with lupus and keratitis, tuberculin with staphylococcic vaccine produced a wholly unexpected reversal of the prognosis.

The tuberculin used was generally tuberculinum purum, Gabrilowitch's modification, the dose being increased gradually from $\frac{1}{50}$ mg. to 10 or 100 mg., or even more. The vaccines were usually begun with 2 to 5 million of dead cocci and increased once or twice weekly up to a maximum of 25 to 50 million. The injections were made with a platinum needle, sterilized in an alcohol flame. A drop of lysol was put on the skin in the subscapular region, the injection given through it, and the lysol wiped away with cotton; no infection ever occurred.

Of the 100 cases treated, 72 were improved, 15 remained unimproved, and 13 died. Concluding, the author states that in the later stages of tuberculosis or in toxemic cases the purified tuberculin, if given in appropriate dosage and with due precautions, is a useful adjunct to sanatorium treatment. The improvement in the general condition, due to the checking of the intercurrent infection, enables the tuberculin to act favorably upon processes which, had the concomitant bacteria been disregarded, would certainly be more refractory. James A. Lyon (Boston Medical and Surgical Journal, August 1, 1912).

SHOULDER DISABILITY, DIFFERENTIAL DIAGNOSIS IN.

In any case of shoulder disability one must exclude *bona fide* brachial neuritis, intra-articular lesions (including luxa-

tions), gross fractures of the humerus, fracture of the acromion, the scapula, and even of the clavicle; a gross or developing lesion in the head of the humerus (gumma, tuberculosis, neoplasm). If these can all be excluded one may look for a bursitis (coracobrachial, or more especially subacromial), an injury to the supraspinatus tendon, perhaps involving the bursa or the greater tuberosity, or a fracture of the tuberosity itself. If physical signs and skiagraph show none of these, the condition may have arisen from a spontaneously reduced dislocation of the shoulder or, as suggested by Thomas, a less tear of the capsule by a sprain. W. M. Brickner (American Journal of Surgery, June, 1912).

STAIN FOR SPIROCHETA PALLIDA.

The author found that the spirocheta of syphilis stains readily, usually in two or three seconds, with a 10 per cent. mixture of a saturated gentian-violet solution in 5 per cent. phenol. The smears may be fixed in the flame, although this is not really essential. A very thin smear is necessary for obtaining a satisfactory stain of fresh material. R. Tunnicliff (Journal of the American Medical Association, June 1, 1912).

SUMMER DIARRHEA IN CHILDREN, TREATMENT OF.

Everything in the treatment of the choleraic cases of summer gastroenteric disease in children, according to the author, should be made subservient to the conservation of strength. Enforced rest, preferably in the open air, should be instituted at once. Stomach washing is useless and bowel irrigations unnecessary. Stimulants and sedatives constitute the only forms of medication indicated. These drugs must be given hypodermically, except in rare instances, where not more than two emergency rectal injections may be administered. The most dependable stimulant is found by the author to be tincture of strophanthus. This he gives with brandy in the serious cases and alone in the less severe. Morphine is the best sedative, acting also indirectly as a cardiac stimulant, and being certain, safe, and prompt; its action is enhanced by the addition of atropine.

For subnormal temperature, the author advises the giving of hot baths (105° to 110° F.) lasting three to five minutes and repeated every half to one hour if the indications for it are present. For cold extremities hot bottles and bags may be employed, but not in the usual manner. The author has learned by experience that the local use of hot mustard water for a few minutes advantageously prepares the patient for the hot bottles applied afterward. Bags and bottles alone take hours to accomplish the desired results. For hyperpyrexia the cool pack may be used by wetting the sheet every half to one hour with water at 85° F., without disturbing the patient.

All excoriated surfaces should be promptly and thoroughly protected. Rectal injection of hot coffee, brandy, or camphor, not repeated more than once, is justified in extreme cases. Hot saline solution (105° to 110° F.), given very slowly per rectum, is often serviceable after excessive peristalsis has been controlled. Legrand Kerr (Long Island Medical Journal, June, 1912).

SUNSTROKE, TREATMENT OF.

True insolation, the author admonishes, must not be confounded with heat exhaustion. In the latter, while there is dizziness, the headache is less severe than in insolation; there is a tend-

ency to fainting with the nausea, and the initial temperature is oftener subnormal. In heat exhaustion, the indications for treatment are to remove the patient to a cool place, spray with cool water, and give ammonia or, better, inhalations of amyl nitrite. If the temperature still remains subnormal, a warm bath may be given. The subsequent weakness should be combated with suitable stimulating tonics.

In true insolation the symptomatic similarity to meningitis gives a clue as to treatment. Beside the classic treatment of tubbing in water in which pieces of ice are floating, venesection, hypodermoclysis, and stimulants, lumbar puncture is to be added. The stimulants should be of the vasodilator type, such as nitroglycerin, amyl nitrite, belladonna or atropine. If these do not suffice to keep the heart up, strychnine and strophanthus should be used. As soon as the patient is removed from the bath —he should not be kept there when his temperature has been reduced to 102° F.—lumbar puncture may be performed with advantage. It lightens the coma, and lessens the headache and somnolence. It should be practised early, and repeated until the cerebrospinal fluid has become entirely normal, macroscopically, microscopically, and chemically. Massary, Lian, and Dufour speak highly of the results obtained with it. O. L. Mulot (American Medicine, July, 1912).

THYROID DISTURBANCES AND TOXEMIA OF PREGNANCY.

Cases presenting a combination of these two conditions are classified by the author into 2 groups: (*a*) cases having no Graves's disease, but without sufficient thyroid secretion to promote the increased metabolism in the liver made necessary by the pregnancy, and probably due to failure of the thyroid to hypertrophy; (*b*) cases associated with Graves's disease, which condition usually causes serious metabolic disturbance.

Toxemias of the first group are frequently much benefited by the administration of thyroid substance, in the form either of dry extract or a serum. In toxemias of the second group, it is essential to determine whether the Graves's disease is in a condition of hyperthyroidism or hypothyroidism. If the former is the case, rest, applications of ice, milk diet, and sedatives should be employed, and, if these measures fail, an antiserum such as the cytotoxic serum of Beebe and Rogers should be administered. If hypothyroidism is present, thyroid substance should be given in the form of the dry extract or, what is more efficient if obtainable, a saline extract prepared from normal human glands for hypodermic administration.

Reliance should be placed upon the nitrogen partition of the urine as a guide to the severity of the toxemia, rather than on the blood-pressure.

Induction of labor is very slow and uncertain in these cases, and, where the history of former labors is that of dystocia, elective Cesarean section is probably the safest method of delivery for both mother and child. George Gray Ward (Surgery, Gynecology and Obstetrics, August, 1912).

THYROID GLAND, METHOD OF OUTLINING.

The principal structures interfering with manual examination of the thyroid are the sternomastoid muscles and, to a much less extent, the sternothyroid and sternohyoid muscles. From studies both on the living subject and cadaver, the author has found that the lower poles of the thyroid lobes are most easily pal-

pated when the neck is strongly extended, the chin rotated over one shoulder, and the side of the head slightly flexed on the chest. The rotation of the chin so carries the larynx and trachea around on their long axes that the lower pole of the lobe lies almost directly above the suprasternal notch, while the slight flexion of the side of the head causes the sternomastoid attachments to approach each other somewhat, releasing the muscle from tension and permitting the finger to enter under its border to outline the lower pole. For examination of the uppor poles the most satisfactory position was found to be moderate flexion of the neck without rotation. The sternomastoids are then relaxed so that they can be easily retracted with the finger and the thyroid pole outlined. Examination of the isthmus of the gland requires no special position.

With these procedures the thyroid can be measured with a fair degree of accuracy in the great majority, if not in all cases. In palpating, a firm but delicate touch is essential. The gland has a feel which distinguishes it from the other structures. As in the usual method of examining the thyroid, the movements of the gland on swallowing are an aid.

Every physical examination should include auscultation over the four thyroid arteries. Frequently one may find patients who, while not showing much thyroid enlargement, do show symptoms very suggestive of hyperthyroidism and in whom conclusive evidence is found in the distinct bruit heard over one or more of the thyroid arteries, *i.e.*, over one or more of the superior and inferior poles of the thyroid lobes. Malcolm S. Woodbury (Journal of the American Medical Association, June 1, 1912).

TONSILLITIS, TREATMENT OF.

The author believes reduction of the fluids taken to a minimum, allowing merely enough for proper renal action, to be favorable to rapid cure in tonsillitis. He commences medical treatment with calomel, in ⅛- to ¼- grain (0.008 to 0.016 Gm.) tablets, every thirty minutes until 2 grains (0.12 Gm.) have been taken or the bowels have moved well. A hot mustard foot bath (1 heaping tablespoonful of powdered mustard stirred in a pail of hot water) is promptly given, the patient being wrapped in a blanket in which he is afterward put to bed. The diet should be light and meat is better wholly refrained from. The specific treatment consists of quinine bisulphate, 2 grains (0.12 Gm.), with Dover's powder, 5 to 10 grains (0.3 to 0.6 Gm.), when the patient is first seen, then given night and morning.

To combat the exacerbations of systemic reaction in tonsillitis, which he believes occur owing to the swallowing and absorption from the stomach and intestines of purulent exudate dripping from the infected tonsils, the author gives 1 or 2 drops (0.05 or 0.1 c.c.) of pure phenol, stirred in ¼ glassful of cold water, 2 to 8 times a day as required.

The patient may locally cleanse the throat with a mild gargle and spray, the latter doing good by aiding suspension of the tonsillar exudate. The throat and tonsils may be gently wiped over once every one to three days with a solution of tannic acid, 1 part, in glycerin, 4 parts, or with one of tincture of ferric chloride, 1 part, in glycerin, 5 parts. Throat lozenges containing guaiacum, 1 or 2 grains (0.06 to 0.12 Gm.), or made up with camphor and menthol, of each, 1/10 grain (0.006 Gm.), and cocaine

hydrochloride, $\frac{1}{32}$ grain (0.002 Gm.), may be administered at the rate of 6 or 8 a day.

Lumps of cracked ice may be sucked to relieve thirst and lessen local inflammation. An ointment or hot poultice may be applied to the neck under the angles of the jaw when lymphatic glandular involvement leads to swelling and pain. Marked mechanical obstruction to breathing is to be met by a linear slash with a guarded bistoury through the bulging tonsil. One or more cuts may be made as necessary, shrinkage through blood depletion and sacrifice of the least amount of tonsillar tissue being the important factors.

Tonic treatment, *e.g.*, the hypophosphites, is employed subsequently if required.

Excessive diarrhea, or the presence of smoky urine, calls for reduction or cessation of the phenol medication. F. Griffith (New York Medical Journal, September 7, 1912).

TYPHOID FEVER, TREATMENT OF.

In cases where cold sponge baths do not lower the temperature in typhoid fever, or affect the delirium and mental symptoms in any way, the administration of cold colonic flushes has been found often effective by the author. He uses a small colon tube, inserted with care just through the sphincter muscle; passes 1 to 3 pints of water of a temperature of 40° to 50° F. in small quantities into the colon, and allows it to return through the tube. Half an hour later the temperature is lower, the pulse fuller, and a better color present. The flushing is repeated every four to six hours if the temperature rises and is not reduced by sponging. Though the procedure was used only in severe cases, in which hemorrhage or other serious complications might be expected, no harmful effects were ever observed.

Regarding the diet in typhoid fever, the author's observation leads him to believe that a liquid diet should be continued for seven days, then cereals added, and after the tenth day soft toast, eggs, and custard in gradually increasing amounts; scraped steak or baked potato may be given at the twelfth or fourteenth day. The patient should be kept in bed, with regulation as to quiet and rest, for two weeks after temperature is normal, then propped up and allowed to get up gradually during the third week. Visitors, excitement, reading to the patient, reading of letters, shaving, etc., may cause much trouble during convalescence, and should be reduced to a minimum. F. C. Penoyer (Journal of the Michigan State Medical Society, June, 1912).

URETHRITIS DUE TO MICROCOCCUS CATARRHALIS.

While a positive diagnosis of gonorrhea in the male is sometimes made from mere microscopic examination of pus from the urethra, there is a possibility of error, as microscopists admit, amounting to as much as 5 per cent. In the author's opinion, the cause of error is the *Micrococcus catarrhalis*.

The individual cocci of this organism are more rounded than those of the gonococcus. They are not so apt to be crowded together in pus cells, and more are found extracellular, until near the subsidence of the infection, when practically all are found intracellular. The only good method of differentiation, however, is by culture.

Describing in general the characteristic features present in 7 cases of *M. catarrhalis* urethritis which he reports, the author states that the inflammation always began as a subacute condition.

There was little redness or swelling of the meatus; a purulent, but not profuse, discharge; little if any burning on urination, and a urine containing surprisingly little pus considering the amount of discharge. There is a tendency to quick recovery if active local treatment is not employed; but under frequent urethral injections the inflammation rapidly intensifies and after a few days much resembles an obstinate gonorrhea. Any or all of the local complications possible in gonorrhea may supervene in cases improperly treated, though when such complications occur but little systemic disturbance is noted. In the diagnosis stress must be laid on the time elapsed since the last copulation. Should it be three to ten days, the infection is probably gonococcic, but should it be one day or more than ten days one should suspect *M. catarrhalis*.

Of 54 cases of urethritis containing Gram-negative diplococci in the smear, 7 proved by culture to be of the catarrhal organism. It being impossible on the first visit to make a diagnosis of this type of urethritis, it is best in those cases in which there is a probability of catarrhalis infection—cases with a history of three or more weeks' incubation—to give nothing but sandalwood oil. In mild cases, this is all that is required to effect an absolute cure in from seven to ten days. In the more severe forms a mild astringent is often needed. In 1 case, organic silver in a mild solution seemed to be of decided benefit. Whatever local treatment is employed, it should be mild. Winfield Ayres (American Journal of Dermatology, June, 1912).

VAGINISMUS, TREATMENT OF.

The following procedure was carried out with successful results in three pronounced cases of vaginismus: Under chloroform anesthesia, a Champetier de Ribes bag 5 to 6 centimeters (2 to 2½ inches) in diameter is introduced and inflated gently, in order to avoid tearing the vaginal tissues. As soon as it is inflated, traction is exerted on it in order to cause the perineum to bulge and the hymen to become prominent. The hymen is wholly excised, and five or six incisions, each only 1 or 2 mm. in length, made at its insertion. The flow of blood is so slight as to render sutures unnecessary. The Champetier bag is then gently drawn out.

At a second sitting another bag, 8 centimeters (3 inches) in diameter, is introduced, very gently inflated to about 25-centimeter size, then deliberately withdrawn, support being given the perineum as though the fetal head were being extracted. The vaginal walls should thereafter be examined, any considerable tears, if present, sutured, and a gauze tampon inserted. Ordinary injections should then be given morning and evening, the diameter of cannula used being progressively increased, without the patient's knowledge, until one 3 centimeters (1¼ inches) in diameter is being used.

In the author's cases prompt conception and pregnancy were rendered possible by the procedure described. Funck-Brentano (Journal des praticiens; Revue de thérapeutique medico-chirurgicale, July 1, 1912).

Clinical Summary

Practical hints from articles and abstracts that have appeared in the Monthly Cyclopedia and Medical Bulletin during the current year.

Acne. TREATMENT. Vaccines useful for selected cases: (1) Cases with deep-seated pustules, occupying a large area; micro-organisms abundant, staphylococcus greatly predominating. Autogenous staphylococcic vaccine most efficient, but must be administered over some months. (2) Cases with lesions indolent and superficial, chiefly inflamed comedones, with but little pustulation. Stock acne bacillus vaccine here gives good results in many instances. Administer 5 to 10 millions acne bacilli every week or ten days. (3) Cases combining the more and less severe lesions of the first and second groups. Use mixed vaccines of staphylococcus and acne bacillus. Other measures: Remove other etiological factors, such as reflex circulatory disturbance due to nervous strain in adolescence and digestive disorders. Correct constipation and regulate diet and mode of life. Locally, squeeze out comedones and wash often and vigorously with soap and water; if suppuration present, puncture or incise pustules, bathe with hot water, and dress antiseptically; disinfect skin and have garment worn next to affected part frequently changed; X-rays; radium for indurated nodules. *Morris and Dore.* Page 93

Vaccines used in about 50 cases. Some received staphylococcic vaccine alone, others autogenous vaccine, and remainder a polyvalent stock vaccine made from previous cases. Injections of 3 to 5 million acne bacilli and 150 to 250 million staphylococci given about every five days. All patients showed marked improvement, irrespective of whether stock or autogenous vaccine used. Old vaccine emulsions found to produce more rapid immunity, with less danger of local reaction or anaphylaxis than those freshly prepared. Constitutional treatment: Correction of any digestive disturbance and regulation of bowels. Locally, mild antiseptic lotion applied. *Lovejoy.* 415

Acne Rosacea. TREATMENT. Where acne indurata associated, incise papules and pustules, scarify distended nasal capillaries, and apply Bier's cup for some time to individual lesions. Have patient apply hot compresses freely to face and at night following ointment: Salicylic acid, 0.6 (gr. x); precipitated sulphur, 4.0 (℥j); white petrolatum, 30.0 (℥j). *Aronstam.* 176

Adenitis, Tuberculous. TREATMENT. Röntgen rays recommended for routine use in cases that do not readily respond to medical treatment. Give ten daily irradiations, then 2 or 3 times a week. Study of proper dosage in each case necessary. Patients thus treated early can be cured without breaking down of a single gland. Where such breaking down does occur, incise, swab out cavity with equal parts of iodine and phenol, and drain. *Boggs.* 229

Albuminuria, Orthostatic. DIAGNOSIS. Euglobin or nucleoproteid reaction of urine useful for differentiation of "harmless" orthostatic or adolescent albuminurias from that of organic renal disease. Test performed thus: Dilute 3 to 5 c.c. of urine with 4 to 5 times its volume of cold distilled water and add 2 to 3 c.c. of 50 per cent. acetic acid. Where test positive, a diffuse cloudiness appears, which becomes more intense on standing; this shows the albuminuria to be harmless. *Elliott.* 365

Anal Fissure. TREATMENT. Where merely a shallow, red, linear tear: (1) At first visit, cocainize fissure and dilate sphincters gently with fingers; lightly curette any unhealthy granulations present. (2) Regulate bowels by correcting diet, nightly injections of olive oil and, if necessary, cascara or compound licorice powder. (3) Anus to be bathed night and morning with warm water, and a sterile gauze dressing smeared with calomel or boric acid ointment—or, if pain very severe, cocaine or morphine (gr. v-x to ℥j)—applied. (4) At 4- or 5- day intervals, cocainize ulcer, stretch sphincters moderately, and apply ichthyol and glycerin, 15 per cent., or balsam of Peru, 20 per cent. in castor oil, upon cotton, to remain for several hours. Tuttle recommends application of pure ichthyol to fissure 2 or 3 times a week. In many cases not amenable to above palliative treatment excision is applicable: Infiltrate under and around fissure with 0.1 per cent. cocaine, seize small fold of skin at its lower angle, and excise ulcer with tissue forceps well up into anal canal. Where but moderate hypertrophy of sphincters, especially in children and the elderly, dilatation is the method of choice; some cases recur. Where marked sphincteric spasm, incision and division of external sphincter, under local anesthesia in majority of cases, always gives excellent results. *Hill.* 345

Anemia. TREATMENT. To increase amount of iron in red cells, following suggested: Acidi citrici, 15 Gm. (3¾ drams); ferri citratis solubilis, 4 Gm. (1 dram); aquæ, 120 Gm. (30 drams). One teaspoonful with water before meals and at bedtime. *Hemenway.* 417

Anemia, Pernicious. TREATMENT. Case in a pregnant woman at term in which 4 intragluteal injections of defibrinated human blood, amounting altogether to 159 c.c., proved markedly beneficial. *Esch.* 44

Apoplexy. TREATMENT. In thrombotic apoplexy early reduction of viscosity of blood by means of citric acid gave excellent results. *Hemenway.* Page 417

Appendicitis, Acute. TREATMENT. At onset withhold all food by mouth to arrest peristalsis and reduce virulence of intestinal bacteria. Avoid giving purgative or fluids. Early or immediate operation is safest course. Appendix should be removed if possible, in diffuse peritonitis invariably so. If purgative has been given, an urgent reason for immediate operation is furnished, especially in children. Where there has been sudden cessation of pain after typical onset, operation should be hastened rather than delayed. *Brace.* 416

Appendicitis, Chronic. DIAGNOSIS. Pain chiefly in right lower quadrant, if unassociated with attacks of epigastric pain and nausea, is seldom due to appendix; before diagnosing chronic appendicitis exclude every other possible condition.

TREATMENT. Appendectomy alone frequently does not cure. This is true especially of patients with chronic constipation; a long, dilated cecum, with other evidences of enteroptosis, is usually present. *Stanton.* 33

Arthritis, Gonorrheal. TREATMENT. Intra-articular injections of iodine tincture, 5 Gm. on the average, used in many cases of various types, with considerable success. Increased swelling at first, then cessation of joint effusion, disappearance of pain, and return of motion. *Hildebrand.* 37

Arthritis, Rheumatoid. TREATMENT. 1. Liberal diet, including plenty of animal food. 2. Guaiacol carbonate in cachets; dose at first from 5 to 10 grains *t. i. d.*, to be increased by 1 to 2 grains each week up to 15 or 20 grains. If given long enough (at least twelve months) this will in many cases arrest disease, diminishing size of joints and permitting of increased movements; it relieves pain markedly. 3. Potassium iodide in 10-grain doses, combined with the guaiacol, increases benefit; its depressing effect to be counteracted by tonics. 4. Thyroid preparations are of value in early cases associated with Raynaud-like symptoms and cramps in extremities. 5. Hot baths, superheated air, or electric light; douche masssage; peat baths or brine baths. 6. Passive movements and massage. 7. Bier's hyperemia, where affected joints few. 8. Fibrolysin followed by massage, where joints more or less fixed owing to fibroid thickenings. 9. Irrigations of colon, where arthritis secondary to chronic colitis. *Luff.* 112

Thyroid preparations useful in many cases of long-standing osteoarthritis and chronic infectious arthritis, probably because of damage to the thyroid gland resulting from its hyperactivity attendant upon continued toxemia. Slow pulse an indication of thyroid failure; emaciation does not preclude it. Dosage of dried thyroid substance ranges from 1½ grains (0.1 Gm.) once daily up to 5 grains (0.3 Gm.) *t. i. d.* in distinct myxedema. Avoid causing headache, diarrhea, or reduction of blood-pressure, and intermit drug from time to time. Thyroid medication necessary for remainder of life where thyroid failure thoroughly established. *Midelton.* 236

Asthma, Bronchial. TREATMENT. Importance of chronic coprostasis and intestinal autointoxication in etiology of asthma shown. Necessity of bowel regulation in the treatment emphasized. *Ebstein.* 33

Epinephrin hydrochloride found most effective drug next to morphine in treatment of the asthmatic paroxysm in 31 cases. Ten to 15 drops of 1: 1000 solution injected under or into skin give immediate relief, which is often also lasting. Blood-pressure not increased by it, but rather lowered. Stramonium cigarettes or fumes give comfort in some patients, hypodermics of nitroglycerin in but a few. Atropine safer but less sure than morphine, which should be last resort. Treatment between paroxysms: Remove reflex causes such as deflected nasal septum, sensitive point near inferior turbinates, disordered stomach, and constipation. Overcome obesity where present. Give prolonged course of potassium iodide, 10 to 15 grains (0.65 to 1.0 Gm.) three times daily, and thereafter alternate use of drug for 10-day periods with 10-day intermissions. *Lemann.* 94

Calcium chloride internally found to exert a notable prophylactic action. After administration for three or four days of a tablespoonful of 5 per cent. calcium chloride in milk every two hours, paroxysms ceased, often not to return for several months. The drug should be continued for a week. No untoward effects. *Kayser.* 416

Management of asthma in children described: A. *During Intervals.*—1. Feet and legs to be always kept warm and dry, and chest and neck properly protected. 2. Low meat diet, with plenty of vegetable proteid, generally to be ordered. Where intestinal trouble, include green vegetables and fruit juices. 3. Upon first symptom of a cold, have child put to bed, and give liquid diet, an active cathartic, and hot drinks. 4. In obstinate cases: change of climate. 5. Where simple anemia present, or history of rheumatism, give appropriate treatment. 6. Have mother give daily exercises in deep breathing, with stress on complete expiration. 7. Have elastic binder, with shoulder straps, worn around chest, to exert slight pressure and aid expiration. 8. Where catarrhal bronchitis persists after acute paroxysms, give sodium bromide in doses of 2 to 4 grains (0.13 to 0.25 Gm.) 3 times daily after meals in essence of pepsin, for several weeks. If no nervous element present, give instead syrup of hydriodic acid in doses of 10 to 20 minims (0.6 to 0.12 c.c.).

B. *In Paroxysms.*—1. Room to be warm;

ventilate from adjoining room. 2. Where tympanites, give warm enema. 3. If paroxysm soon after hearty meal, give emetic. 4. Specific remedies, each relieving certain cases: Epinephrin, 3 to 5 minims (0.2 to 0.3 c.c.) of 1: 1000 solution hypodermically; morphine sulphate, $\frac{1}{30}$ grain (0.002 Gm.); chloral hydrate in 3-grain (0.2 Gm.) doses; inhalations of nascent oxygen. 5. Where cough and wheezing after paroxysm relieved, give heroine in syrup of hypophosphites; a single dose of antipyrin at bedtime; croup-kettle treatment, using 30 minims each of creosote and oil of eucalyptus to a pint of water, employed with croup tent one-half hour at a time two or three times daily; or similar inhalations of lime water. 6. Give much general care as to diet, elimination, and covering until cough relieved. *McClanahan.* Page 479

Blepharitis. TREATMENT. Marginal blepharitis in children to be treated as follows: 1. Remove crusts 2 or 3 times daily with sodium bicarbonate solution (gr. x to f℥j) or, at first, with warm olive oil. 2. After careful washing rub into roots of lashes a stimulating mercurial ointment (gr. viij of ammoniated mercury or gr. iv of yellow oxide of mercury to ℥j of white petrolatum). 3. If much discharge, especially purulent, cutting of lashes will facilitate cleansing; in worst cases, epilate all lashes involved in pustules. 4. If lid much excoriated, paint 1 per cent. silver nitrate solution on surface daily. 5. Keep lids closed with wet carbolic dressing (1 to 80) for a few days in severe cases, removing it *t. i. d.* to cleanse lids; avoid entrance of solution into eye. 6. Keep child from reinfecting lids with fingers by use of lightly smoked, domed protecting spectacles, or in the very young by cardboard splints bandaged on flexor surface of elbows. 7. Prescribe correcting glasses if required, to remove cause of ocular hyperemia. *Lawson.* 103

Burns. TREATMENT. Dry open-air treatment of extensive burns recommended. After thorough cleansing with soap and water and gasoline (under anesthesia, if necessary), dust burn lightly with zinc stearate powder. Give morphine to relieve pain. Once daily remove all heavy crusts, wipe off exudate with dry sponges, and dust on thin coating of powder. Never allow exudate to accumulate under crust over twenty-four hours. Success of treatment lies in constant absolute exposure of the burn. *Jack.* 346

Carbuncle. TREATMENT. Use of precipitated sulphur, applied as powder into points of suppuration or ulceration or as ointment with cocoa-butter base (1 to 8), advised. Constant application of compress wet with solution of calcium creosote equally efficacious. *Kolipinski.* 463

Carcinoma. TREATMENT. Case of skin carcinoma reported in which local use of 1: 1000 epinephrin solution appeared to cause disappearance of growth. Solution either painted freely over tumor or applied in wet dressing. Tumor gradually replaced at its periphery by healthy tissue. Six years elapsed without recurrence. *Ritchie.* 480

Cellulitis. TREATMENT. In cellulitis of hand: Apply Bier bandage and treat pain with hot dressings of saline solution. If pain not relieved, reapply bandage several times; if this still ineffective, make incision or incisions into the part, apply bandage again, continue hot dressings, and have hand placed in bath of hot saline thrice daily. Give iron and arsenic, prepare and inject a vaccine, and administer an antitoxic serum, particularly in early stages. Continue Bier's bandage after cellulitis has subsided and prescribe active movements and electric stimulation of muscles. X-rays often useful to cause deep hyperemia and promote removal of inflammatory products. Massage and passive movements after all inflammation gone. *Corner.* 346

Chorea. TREATMENT. Ethyl carbamate (urethane) gave favorable results. *Bertling.* 490

Clavicle, Fracture of. TREATMENT. Dressing of heavy moleskin plaster devised to avoid skin irritation of zinc oxide plaster and prevent looseness of dressing requiring reapplication. Warm a piece of moleskin 4 or 5 inches wide by 18 long, loop it about humerus high up in axilla, join its ends, and insert eyelets in them for lacing. Place a second strip around healthy side of body and adapt its posterior end for lacing with humeral loop, thus drawing shoulder of injured side back. Next place piece of moleskin 7 x 10 inches over healthy shoulder as a cap, and insert eyelets in free ends anteriorly and posterior. Pass a long strip 3 inches wide around forearm of injured side close to elbow, and connect ends in front of and behind body by laces with shoulder cap on healthy side, thus providing for elevation of injured shoulder. By tightening one lacing more than other, elbow may be brought forward or back as desired. Wait till adhesive well secured to skin before tightening laces. *Collins.* 347

Colitis, Mucous. TREATMENT. Apply to abdomen at night towel soaked in magnesium sulphate solution, ½ ounce to 1 pint of water, at 75° F. Irrigate rectum with 2 gallons of same solution at 85° to 90° F. Mucus disappears, and pain and gas formation diminish. Milk diet, with fruit, especially grapes, added, also effective; 1½ quarts of milk to be taken during day and 1 pint of hot milk at bedtime; continue for ten days to two weeks. Crude tar of *Pinus palustris*, mixed with flour and ordered in No. 2 gelatin capsules, gave good results; 2 or 3 capsules one hour after meals. *Joseph.* 42

Calumba-agar, containing solid constituents of 2 c.c. of fl. ext. calumbæ in 1 Gm. of agar, found useful in colitis with mucus in stools (*e.* Constipation). *Elsholz.* 231

In treating spastic constipation in these cases: (1) Where weakness of abdominal muscles, prescribe an elastic belt to support abdomen above pubes, especially in the obese; combine with this exercises. (2) Where feces too dry, salines, with or without agar-agar or regulin, give best results. (3) Where insomnia in early morning hours, a saline draught will often bring on sleep. (4) Where pain is present owing to slow passage of inspissated fecal material, give oxgall pills and oil enemata. (5) Cellulose in diet helps to prevent fecal accumulations, but discretion is required in its use; agar-agar should be used as a material to replace vegetable fiber. *Higgins.* Page 295

Conjunctivitis, Gonorrheal. TREATMENT. Fifteen severe cases treated by local application of steam, to kill gonococci. As soon as eyelids can be everted—iced compresses having been applied—conjunctival sac is syringed with potassium permanganate solution, dried with gauze, and treated with steam, neighboring skin being protected with linen or wet gauze. Where chemosis marked, ocular conjunctiva is also steamed, care being taken to avoid cornea. Ten patients with corneas uninvolved rapidly and completely recovered, discharge early ceasing; in the 5 other cases conjunctivitis was cured, together with, in 1 instance, cornea. Steam treatment considered superior to silver nitrate. *Goldzieher.* 419

Constipation. TREATMENT. Hormonal, 20 c.c. injected intravenously or intramuscularly, found effective in constipation with general atony and in postoperative paresis. *Hoxie.* 170

Medicated agars considered useful. Phenolphthalein-agar, containing 0.03 Gm. of phenolphthalein in 1 Gm. of agar, and rhubarb-agar, containing 1 c.c. of fl. ext. rhei in 1 Gm. of agar, recommended. Prepared by dissolving remedy in boiling agar water solution, thoroughly mixing, evaporating to the original dry agar volume, and grinding up into flakes. Dose, 1 teaspoonful twice daily in water after meals. *Einhorn.* 231

Constipation with Diarrhea. Found in gouty patients, after abdominal and rectal operations, in pulmonary tuberculosis, in achylia gastrica, and in hypochlorhydria with gastrointestinal atony.

TREATMENT. A few (3 to 5) 2- to 5- grain doses of calomel, followed by magnesium sulphate, or sodium sulphate, or a laxative water; in other cases, castor oil in ½- to 1-dram doses 2 or 3 times daily, continued for a month. Ichthyol valuable in cases with much fermentation. Physical treatment with oil or oil-emulsion enemas, hot baths with massage, or hot wet packs changed every 15 to 30 minutes. Rest in bed. Gastric lavage. Well-prepared food. Strong, black coffee with plenty of sugar often useful; also good beer or cream; bread spread with butter and honey; stewed or dried fruit (latter soaked in water); cheese; agar-agar, etc. Modest exercise alternating with rest; salt baths, sitz baths; sensible wearing apparel; correctly fitted corset. *Bernheim.* 69

Convulsions, Infantile. TREATMENT. Ethyl carbamate (urethane) found effective in infantile convulsions due to gastrointestinal or brain disturbances, as well as in nervous excitement and pain due to injuries or disease. Dosage: 0.5 to 1 Gm. (7½ to 15 grains) in infants less than 1 year old; 2 Gm. (30 grains) in those 1 to 2 years old. May be easily given either by mouth or rectum. No untoward effects ever noted. *Bertling.* 490

Corneal Opacity. TREATMENT. "Pressure inunction" of 30 grains (2 Gm.) of calomel in 1 ounce (32 Gm.) of petrolatum advised. After free application of ointment to closed eyelids and in conjunctival sac, pad of absorbent cotton is placed over it and 3 or 4 turns of elastic flannel bandage then applied rather tightly. This is employed for two to three hours daily. Treatment to be persisted in for some months. Ointment may be strengthened or weakened according to tolerance. *Ryerson.* 484

Corneal Ulceration. TREATMENT. Large doses of pneumococcus serum brought about prompt cure in 70 per cent. of cases of pneumococcic corneal ulceration. *Gebb.* 426

Coryza, Acute. Aromatic spirit of ammonia and sweet spirit of niter recommended as best agents to "abort" a cold. *Beverley Robinson.* 47

Mixed stock vaccine composed of various strains of pneumococcus, 40,000,000; streptococcus, 30,000,000, and staphylococcus, 150,000,000, recommended in colds. Marked improvement usually apparent twelve to twenty-four hours after first inoculation. Repeat dose on second day, then, in prolonged cases, at three- to six- day intervals. Severe complications following colds prevented by vaccine treatment. In cases where catarrhal condition persists between acute attacks, *M. catarrhalis*, 100,000,000, should be substituted for staphylococcus in the vaccine. In some cases, dose has to be doubled. Inoculations made at four- to seven- day intervals for several months. *Sherman.* 291

Diabetes Mellitus. TREATMENT. Sodium perborate, applied as a powder, usually twice daily, brought about rapid healing in 3 cases of diabetic gangrenous ulcers. *Herzfeld.* 167

Artificial milk, prepared as follows, advised in diabetes: 1 broken raw egg; 2 teaspoonfuls of malt extract; 4 teaspoonfuls of olive oil. Beat up in bowl for five minutes; add gradually while stirring 1 pint of drinking water; season with salt; in hot weather add crushed ice. Where patient constipated, has hemorrhoids, is obese, or has hepatic congestion, following purgative combination is valuable: Sodium phosphate and sulphate, of each, ℥iv; dissolve with shaking in quart of cold water. Dose, 1 wineglassful in a tumbler

of cold water fifteen or twenty minutes before breakfast or supper. Somewhat milder, more pleasant, and gently antacid is the following: Sodium chloride, ʒiij; sodium bicarbonate, ʒiv; sodium sulphate, ʒiiiss; sodium phosphate, ʒiv. *Kolipinski.* Page 463

Diarrhea. TREATMENT. Agar medicated with astringents found useful where intestinal mucosa inflamed or ulcerated. Gambir-agar, containing solid constituents of 2 c.c. of tr. gambir comp. in 1 Gm. of agar; tannin-agar, 0.03 Gm. of tannin to 1 Gm.; simaruba-agar, 1 c.c. of tincture to 1 Gm., and myrtle-agar, 1 c.c. of tincture to 1 Gm., recommended, the last especially in diabetic cases (*v.* Constipation). *Einhorn.* 231

Diarrhea, Infantile. TREATMENT. Soy flour useful in summer diarrhea and some forms of intestinal indigestion; given in form of dilute gruel with or without addition of barley flour and later condensed milk or cows' milk. One to 2 level tablespoonfuls of soy flour to the quart suffice at first; later increased to 4 spoonfuls. Soy-bean, barley, and condensed-milk mixtures useful where, cows' milk disagreeing, there is difficulty in finding food sufficiently nutritious for child. Orange juice advisable from time to time to prevent tendency to scurvy. *Ruhräh.* 52

Following combination recommended in the more severe forms of infantile diarrhea: Magnesii sulphatis, ʒj-ij (4.0-8.0 Gm.); mucilaginis acaciæ, fʒss (15 c.c.); phenylis salicylatis, gr. v-x (0.3-0.6 Gm.); glycerini, fʒiij (12 c.c.); aquæ chloroformi, q. s. ad fʒiij (90 c.c.). Give 1 teaspoonful every one, two or three hours, sleeping or waking, vomiting or not. Add glycerin when urine concentrated, or give a little sweet spirit of niter separately. Where the salol causes nausea and vomiting, omit it. Take character of stools as guide to frequency of administration: If blood in them does not diminish increase number of doses. Feed child with barley water and white of egg beaten up with an equal amount of water, or better, soda water. In serious cases peptonoids may be added though they sometimes disagree. Place pinch of pepsin scales on tongue after food. *Ellis.* 349

Diphtheria. TREATMENT. Case in which, after a cure with antitoxin, throat cultures showed abundant diphtheria bacilli three weeks after start of disease. Repeated applications to the throat of a dilute culture of *Staphylococcus pyogenes aureus*, made by inoculating 8 c.c. of bouillon with a loopful of a fresh agar growth of the coccus, led to disappearance of diphtheria organisms from throat, thus preventing the child from being a "diphtheria carrier." General condition markedly improved. No untoward effects. *Page.* 166

Eclampsia, Puerperal. TREATMENT. Citric acid found of great value in cases of threatened eclampsia, with marked edema and albuminuria. Following combination advised: Acidi citrici, 30 Gm. (7½ drams); liquoris sodii phosphatis comp., 80 Gm. (2½ ounces); water, 40 Gm. (10 drams); 1 dram in a full glass of water every three hours; later, twenty minutes before each meal and at bedtime. *Hemenway.* 417

Eczema. TREATMENT. Alcohol useful as antiparasitic and to relieve itching. Apply 90 per cent. alcohol twice daily to and around lesions before carrying out other local measures. Good results even in rebellious cases. Applicable in all forms of eczema except those with abundant watery discharge. Continue long after affection overcome, to prevent recurrence. *Monatsh. f. pr. Dermat.* 96

Local treatment with heated air employed in 35 cases of eczema in infants, with good results. Applications made once daily for five to ten minutes; affected region then covered with olive oil. Strict dietetic measures also to be enforced. *Perlmann.* 167

Venesection followed by injection of salt solution gave good results in certain cases of chronic eczema with itching in which other treatment, including X-rays, had failed. (*V.* Pruritus, Treatment.) *Simon.* 365

Eczema rubrum of lower extremities to be treated thus: Restrict intake of meats and sweets, interdict alcohol, cause bowels to move daily, and advise fresh air and at least eight hours' sleep. Locally, remove surgically any varices present, if situated above eczematous area. Then use rubber bandage. First apply ordinary lint around leg, with woolly side covered thickly with a salve and placed over diseased area. Then put on thin rubber bandage, about 3 inches wide and 5 yards long, from toes to knee, overlapping one-third of width, without reversing and leaving heel free. Maintain an even degree of pressure. At night remove bandage and dressing. Wash former in dilute phenol (3j-Oj) and draw through dry towel. Wash leg with weak phenol, dry with absorbent cotton, and apply an astringent cooling lotion twice at fifteen-minute intervals. Dress leg and reapply rubber bandage in morning. *Bechet.* 418

Enterocolitis in Infants. TREATMENT. Pure cultures of *B. bulgaricus* used with marked benefit, all cases except the most advanced being cured. After preliminary dose or two of castor oil, liquid cultures given in doses of ½ or 1 teaspoonful every three or six hours, in a little water with milk-sugar. Diet for first one or two days: Whey from pure milk, diluted according to age; later, add milk in increasing amount, and for older babies barley or other cereal water. Milk used must be free of preservative, otherwise lactic bacilli inhibited. Where purity of milk not certainly known, give barley water with lime water and milk-sugar, and later add condensed milk. In breast-fed infants, milk usually continued and cultures given between feedings. *Harrington.* 351

Epididymitis, Gonorrheal. TREATMENT. Where preliminary pain at external abdominal ring (vasitis), put patient to bed and support scrotum by strip of adhesive stretched over anterior surfaces of thighs. For established epididymitis, support scrotum in same way, and apply to it following ointment: Mentholis, gr. xv (1 Gm.); ung. belladonnæ, gr. xx (1.3 Gm.); ung. Credé, gr. xxx (1.3 Gm.); ichthyolis, ʒj (4 Gm.); petrolati, q. s. ad ʒj (32 Gm.). If swelling of epididymis does not quickly resolve, strap testicle, as follows: Envelop affected half of scrotum in a square of gauze. Press testicle into bottom of scrotum with thumb and index finger and bind a strip of adhesive above organ, holding it down. Then pass other strips, starting at the first one, around under testicle and up the opposite side until organ is covered. Finally, secure with another transverse strip over the first. Support with suspensory. Renew strapping every other day. *Bethune.*
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Epilepsy. TREATMENT. (1) Secure bowel movements once or twice daily. (2) Have patient drink water freely. (3) Tepid sponge bathing or brief immersion baths followed by gentle rubbing. (4) Mild exercise in open air. (5) Mixed diet, consisting of vegetables and milk in liberal amount, and also white meats; starchy foods in limited quantity; normal amount of fats. Correct digestive difficulties. (6) Bromides to be used early in disease and in sufficient amount to control seizures. (7) Sodium chloride withdrawal found an aid to bromides, though prohibition of salt should not be so radical as to cause anorexia and loss of weight. (8) Combination of sodium glycerophosphate with bromides proves beneficial. (9) Thyroid extract valuable in epileptic children with arrest of development, as well as, occasionally, in other cases; to be given persistently, in small doses; after a time, it will be found bromides can be reduced or even for a while suspended. (10) Trial of pituitrin in epilepsy justifiable. (11) Symptoms preliminary to seizures, such as headache, depression, etc., indicate the prophylactic use of a saline purge, diminution of food, and increased bromide dosage. *Dercum.*
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Operation justifiable: (*a*) In traumatic epilepsy with external evidence of injury; (*b*) *do.*, without evidence of injury when nature of attacks or symptoms immediately following injury indicates seat of lesion; (*c*) in Jacksonian epilepsy; (*d*) in general epilepsy where suggestion of a focal lesion may be found before or after attacks in some disturbance of motion, sensation, or reflexes. Gratifying results may by anticipated after operation in 10 to 25 per cent. of cases. *Frazier.* 293

Epistaxis. TREATMENT. Sodium perborate used with success to arrest hemorrhage in epistaxis and after adenoid operations or tonsillotomies. *Herzfeld.* 167

Erysipelas. TREATMENT. Solution of 20 drops of phenol in 25 Gm. (6 drams) of pure neutral glycerin recommended. It is painted over affected area and surrounding skin, but must not come in contact with mucous membranes. *Lodi.* 98

Solution of aluminum acetate recommended for local use in facial erysipelas (*v.* Furuncle). *Stansbury.* 227

Paint involved area in mild cases every hour with preparation of 15 minims (1 c.c.) of phenol and 1 ounce (30 c.c.) of turpentine oil. Treat severe, widespread cases with dressings soaked in mercury bichloride, or better, absolute alcohol, applied twice daily or oftener. Internally give 4 drams (15 c.c.) of camphor water three times daily, and by enema 15 grains (1 Gm.) of collargol twice daily. *Van Velzen.* 348

Esophageal Carcinoma. TREATMENT. Small amounts of hydrogen peroxide solution of 1 to 2 per cent. strength, sipped at intervals of an hour, facilitate descent of food, even in late cases where rectal feeding has been resorted to. *Liebermeister.* 98

Femur, Fracture of Neck of. TREATMENT. Apply extension apparatus. Control eversion of foot as follows: Thin a medium-sized pillow along one edge and slip this under limb, reaching nearly to heel. Pin securely to bandage supporting the extension straps, roll pillow firmly against limb, and pin at its other edge. Put firm roller bandage around pillow and limb. Pillow should be adjusted to raise heel a little, avoiding pressure on it. Finally, place smaller pillow under popliteal space and fasten to the larger pillow. *Totman.* 228

Furuncle. TREATMENT. Seen early, a superficial furuncle may be aborted by inserting pointed matchstick, dipped in phenol, deeply into its center; if lesion deep, inject several drops of liquefied phenol at base of lesion. For a furuncle seen late in first stage: Scratch off central vesicle and apply a Bier cup. Dress with sterile gauze wrung from normal saline solution with 1 per cent. sodium citrate, after inserting a bit of rubber dam in opening if there be tension. Protect surrounding skin from citrate with ointment, and over citrate gauze apply waxed paper or oiled silk, covered by compress and bandage. Cupping and dressing may be repeated every four hours until slough loose, when latter is removed with small forceps. Apply citrate only three days. Also give citrate internally, 15 grains (1 Gm.) *t. i. d.* after meals. Where bluish, flabby granulations: Strap edges of wound with adhesive strips, dry granulations, mop with iodine tr., and dust with Bier's powdered silver nitrate. Snip off exuberant granulations. To promote epithelial regeneration, use 8 per cent. scarlet red ointment or amidoazotoluol. Prevent autoinoculation by shaving skin around furuncle and disinfecting with 70 per cent. alcohol, tincture of iodine with benzine, diluted liquor formaldehydi, or aluminum

acetate solution. Repeat local disinfection with benzine at each dressing. Where furuncle first seen in stage of softening, incise and drain; latter may be assisted with a Bier cup. For very large lesions or in furuncles of face, inject 3 per cent. novocaine under base, wait five minutes, and remove core from tumor with small curette. Where supposed boils become carbuncles, excise the whole area, controlling bleeding with cautery and compresses, and apply pure liquefied phenol. For recurring furunculosis: Bacterin therapy with killed staphylococci; initial dose, 100 million bacteria, increased by weekly doses up to 1 billion. Yeast also useful. *Skillern.* Page 99

Solution of aluminum acetate recommended for local use. Made with aluminum sulphate and acetic acid, of each, 300 Gm.; calcium carbonate, 130 Gm.; distilled water, 1000 c.c. For use, dilute with distilled water, 1 to 7 or 10, and apply to parts on several thicknesses of gauze, covered with rubber tissue or oiled silk, and a loose bandage. Addition of ¼ volume of alcohol or glycerin to solution avoids wrinkling and whitening effect on skin. *Stansbury.* 227

Venesection followed by injection of salt solution gave much benefit in furunculosis. (V. Pruritus, Treatment.) *Simon.* 365

Gastric Dilatation. DIAGNOSIS. Vomiting, abdominal pain, distention, constipation (occasionally diarrhea), collapse, splashing sounds, and peristaltic movement over stomach, appearing suddenly in the course of pneumonia, should at once suggest acute gastric dilatation.

TREATMENT. 1. Introduce stomach tube and practise lavage as often as distention occurs, even in cases with collapse. 2. Turn patient on right side or face. 3. Interdict food and drink by mouth. 4. Strychnine and eserine hypodermically apparently useful in some cases. *Fussell.* 107

Gastric Neuroses. TREATMENT. Condition nearly always associated with gastric atony and vertical "fish-hook" stomach. 1. Relief from pain (due to hyperacidity) obtained by recumbent position on right side or knee-chest posture for several minutes at short intervals after meals. 2. Peristalsis assisted by massage or having patient clasp left knee and make strong intermittent pressure of thigh against abdomen while lying halfway between prone and lateral position. 3. Helpful suggestion. 4. Abundant nourishment in small quantities at short intervals. 5. Attention to any existing anemia. Rational non-surgical treatment effective in majority of cases. *Greene.* 174

Fresh pineapple juice found useful to relieve anorexia. *Floersheim.* 233

Gastric Ulcer. DIAGNOSIS. Rice, milk, potatoes, and prunes cause positive reaction in benzidine test for occult blood in stomach contents, and hence must be excluded from diet before test is made. *Floersheim.* 105

Watermelon pulp found to cause positive reaction in guaiac-turpentine test for occult blood in feces. *Newbold.* 106

Gastritis. TREATMENT. In gastric catarrh with much mucus, citric acid often gives quick relief. Withhold carbohydrates from dietary where amylaceous dyspepsia coexists. In acute gastritis give sodium or potassium citrate and larger amounts of water. *Hemenway.* 417

Gonorrhea, Acute. TREATMENT. Method causing arrest of suppuration in three to five days described. Inject 5 to 15 c.c. (¼ to 4 drams) of 0.25 per cent. protargol solution into urethra every half-hour in daytime and every hour at night. To be retained two to ten minutes, during which time urethra is gently massaged from behind forward. Increase strength of solution gradually. Patient should ingest large amount of fluid, in order to be able to urinate before each injection. Continue injections, given as often as possible, two or three weeks after cessation of pus. Then alternate protargol with lead acetate and zinc sulphate, of each, 0.3 Gm. (2 grains) in 200 Gm. (4⅔ ounces) of water. *Kuhn.* 37

Necessity of early treatment emphasized. Inject slowly into urethra 1½ drams (6 c.c.) of 1: 6 solution of argyrol, and have it retained for five minutes. Patient should then stay as long as possible without urinating. Physician is to give 2 injections daily, morning and evening, while in interval patient makes 2 injections of a 1: 25 solution. Patients thus early treated cured in from two to five days. Continue strong injections until urethra dry and redness gone. Patient may then keep on injecting weak solution. *Minet.* 419

Gonorrheal Cervicitis and Endometritis. TREATMENT. I. Acute cases: 1. Confinement to bed. 2. Keep emunctories active. 3. Limit diet. 4. Cleanse vagina frequently with large amounts of hot saline solution or hot water containing boric acid or a weak iodine solution. Use irrigator with nozzle projecting a straight forcible stream, and pinch mucous membrane of introitus around nozzle, to flush cavity satisfactorily. Intrauterine measures and pelvic operation intervention contraindicated. II. Subacute cases: 1. Soften and dilate cervix with Goelet's uterine electrodes and galvanic current. 2. Flush uterine cavity with hot iodine solution, 1 dram (4 c.c.) of the tincture to a quart of water, or silver nitrate, 1: 5000. 3. As condition improves, substitute daily intrauterine injections of iodized phenol (equal parts of iodine tincture and phenol) or 1 per cent. silver nitrate. Use syringe with long pliable nozzle, with its tip wrapped with cotton; inject fluid into cotton and withdraw syringe. Insert iodine-glycerin tampon (1 dram to 4 ounces), which patient is to remove next morning. Remove cotton within uterus at next visit.

III. Chronic cases: 1. Puncture, evacuate, and sterilize diseased Nabothian glands. 2. Touch opened glands and erosions about os with pure iodine tincture. 3. Intrauterine irrigations and injections as above, three times weekly. 4. Curettage of uterus, thoroughly scraping internal os and cervical canal, followed by swabbing with iodine tincture and appropriate after-treatment. *Dannreuther.* Page 100

Gout. TREATMENT. Radium emanations used in 400 cases of gout and chronic arthritis. Patient in closed radium room for 24 to 36 sittings of two hours each. Injections of soluble radium salts near involved joints given in addition; also superheated air, electric light, and brine baths. Absolute rest in bed an adjuvant. Out of 50 cases in which blood was examined before and after treatment, uric acid disappeared in 37 instances, synchronously with marked amelioration. Cases in children particularly benefited, but cases of senile tuberculous and syphilitic arthritis and cases of very long standing, with marked joint changes, not suited for radium treatment. Low purin diet should also be tried for a few weeks or months; if ineffective, replace it by simple mixed diet, with as much of green vegetables and fruit as possible. *Gudzent.* 95

Combination of sodium citrate with salicylate recommended for gouty conditions (*v.* Rheumatism, Chronic). *Hemenway.* 417

Hay Fever. TREATMENT. Calcium creosote solution diluted with 8 to 10 parts of water recommended; throat and nasal fossæ to be sprayed every hour or two for two or three days. Potassium iodide, 5 grains *t. i. d.*, effective in hay asthma; arsenic may be added with advantage. *Kolipinski.* 77

Mixed staphylococcus, pneumococcus, and streptococcus vaccine given at three- to four-day intervals with pronounced benefit. Some cures after 3 or 4 inoculations (*v.* Coryza, Acute). *Sherman.* 291

Hemophilia. TREATMENT. Bleeding from wound in a hemophilic boy, previously uninfluenced by any remedial agent, checked by allowing blood from finger of a normal individual to drop on the wound. A clot formed immediately. *Sager.* 168

Hemorrhoids. TREATMENT. Injection method used in 55 cases with satisfactory results. After suitable preparation, place patient on left side, with knees flexed. If tumor presents, apply compress soaked in 2 per cent. phenol to it and allow to remain two or three minutes; if not, use rectal speculum. Solution to be injected into pile consists of equal parts of phenol, glycerin, and sterile water, and of this 2 to 4 minims (0.12 to 0.25 c.c.) are used, according to size of growth. After injection tumor should be forced back above sphincter, and patient recline for next six hours and abstain from straining, etc. If prolapse should occur, pile should be returned at once and hot compresses frequently applied. Pain after operation may be relieved, if necessary, with a few 2½-grain (0.15 Gm.) tablets of Dover's powder, though it is rarely severe. Inflammation of pile occurred in 3 cases of series. After disappearance of tumor a small ulcer may remain, which will rapidly heal on applying silver nitrate solution (10 or 15 grains to the ounce) every two or three days. *Wilkinson.* 168

Following preparations recommended: (*a*) Pulveris gallæ, zinci oxidi, ana 3j (4); hydrargyri chloridi mitis, 3ss (2); bismuthi subnitratis, 3j (4); cocainæ hydrochloridi, gr. v (0.3); unguenti aquæ rosæ, 3j (30). (*b*) Pulveris gallæ, zinci oxidi, ana gr. v (0.3); morphinæ sulphatis, gr. ¼ (0.015); cocainæ hydrochloridi, gr. j (0.06); atropinæ sulphatis, gr. $\frac{1}{60}$ (0.001); olei theobromatis, gr. xxv (1.6); ft. suppos. In external piles ointment is smeared within and around anus, and protected with cotton partially inserted therein; used three times daily. In internal piles, suppositories used, once or twice daily. Anus to be kept clean and constipation avoided. Inject 4 to 6 ounces of cold water in rectum several times daily. *Robinson.* 481

Hepatic Affections. TREATMENT. Combination of sodium salicylate and sodium benzoate found useful for cholagogue and "flushing-out" effects in various disorders, especially suppurative angiocholitis, cholecystitis, and lithiasis. Sodium salicylate induces flow of concentrated bile; sodium benzoate, of dilute bile. Relative amounts of two salts to be varied according to indications. Formula suggested: Sodium benzoate, 0.75 Gm. (12 grains); sodium salicylate, 0.5 Gm. (8 grains); sodium borate, 0.25 Gm. (4 grains); rhubarb, 0.3 Gm. (5 grains); to be taken *t. i. d. Polain-Cartier.* 38

Hernia, Inguinal. TREATMENT. In infants use truss; to be kept applied continuously. After two years, if hernia still persists, urge radical cure, if possible. *Campbell.* 169

Hodgkin's Disease. TREATMENT. Röntgen rays cause prompt reduction of glands. Whenever recurrence is manifest, renew the treatment. External tumors can thus be controlled a long time, or until patients succumb to deep involvement. *Boggs.* 229

Hyperchlorhydria. TREATMENT. Rhubarb and soda, or rhubarb and magnesia, either in mistura rhei et sodæ or in Gregory's powder, useful in gastric disorders with fermentation or hyperacidity. *Beverley Robinson.* 47

Salt-poor diet, chiefly of albumins and fats, recommended. Cream to be taken, but not milk. Meat to be used only after softened by hanging and well pounded. Whenever heartburn appears, 1 or 2 raw eggs to be swallowed; soft-boiled eggs not so well borne. Light, salt-poor cheese especially recommendable. Foods made from flour to be restricted and taken only with eggs and much unsalted butter and rich cream. Vegetables to be

scalded two or three times with water and latter then thoroughly poured off. Combat hyperacidity due to vagus excitation with pills of belladonna and valerian. For the overexcited mucosa give some astringent in tepid water half an hour before meals. To the very nervous administer also 45 to 60 grains (3 to 4 Gm.) of a bromide, for four to six weeks. Four or five meals to be taken daily, unless gastric atony or emaciation necessitate shorter intervals. *Ehrmann.*
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Hyperidrosis. TREATMENT. For sweating feet: Bathe them every night with 1 per cent. potassium permanganate solution and dry thoroughly. Next morning dust on following powder: Potass. permang., ʒij (8.0); alumin. pulv., gr. xx (1.25); talc. pulv., ʒj (32.0); zinci carbonat. et oxid., of each, ʒss (16.0); or else, have patient wear white stockings previously soaked in saturated boric acid solution. Where bromidrosis, use dilute formalin. For sweating in axillæ: Bathe with weak vinegar, and apply following powder on gauze pad: Acid. salicyl., gr. xx (1.25); amyli pulv., ʒij (8.0); alumin. pulv., q. s. ad ʒiss (48.0); or else, use following lotion: Betanaphtholis, ʒj (4.0); glycerini, ʒij (8.0); alcoholis, q. s. ad ʒiiss (80.0). Where persistent bromidrosis, short exposures to X-rays may be effective. *Meachen.* 177

Hyperthyroidism. DIAGNOSIS. Elevation of temperature found an early symptom in many cases, especially mild ones. When, in absence of acute or other tangible disease, there have been loss of weight and augmented nitrogen and phosphoric acid excretion, and when, after administration of a thyroid or iodine preparation, there occur the characteristic psychoneurotic and cardiac symptoms of excessive thyroid activity, elevation of temperature is a thyrotoxic phenomenon. *Stern.* 39

Hypothyroidism. DIAGNOSIS. Blood showing mild leucocytosis and relative lymphocytosis with eosinophilia from 3 per cent. up is highly suggestive of thyroid insufficiency. *Collins and Kaplan.* 40

Ileus. TREATMENT. Enterostomy performed in 20 cases in terminal stages of ileus, with result that only 16.6 per cent. died from the condition. Should preferably be done before intestinal paralysis is complete and abdominal muscles stretched beyond limit of tonicity. Lower ileum is seat of election for opening in gut; colon should not be used. Tube not less than 5/16 in. inside diameter should be used for drainage. *Taylor.* 397

Inertia, Uterine. TREATMENT. In secondary inertia and where pains ineffective owing to hydramnios or twin pregnancy, intramuscular injection of pituitary extract is indicated. May also be employed in febrile states. Where complications expected after birth, inject pituitary extract a few minutes before end of second stage. Where used in first stage, time to inject is when os is a little less than size of palm in primiparæ, and when it will just admit 2 fingers in multiparæ. *Jaeger.* 234

Intertrigo. TREATMENT. In infants acute enterocolitis, frequently the cause of intertrigo through the irritating discharges, should be overcome by dieting: stop milk; give rice, arrowroot, or albumin water, with plenty of pure water to allay thirst. Internally, give sodium phosphate, 5 to 10 grains (0.3 to 0.6 Gm.) every morning for two or three days, usually followed by castor oil, 1 dram (4.0 c.c.). Locally, soak parts with oatmeal water. Give an oatmeal bath, by soaking bag filled with oatmeal in tub filled with boiling water for one-half hour, then allowing to cool to 100° F. and giving child hip bath. Then use following salve: Calamin and zinc oxide, of each, 3 parts; petrolatum, 50 parts. Dust parts with cornstarch or wheat flour. Use salve three times daily, previously cleansing parts with olive oil, if necessary. *Fischer.* 170

Intestinal Indigestion. TREATMENT. Pure cultures of *B. bulgaricus* used with benefit in cases of indigestion of putrefactive type with odorous stools and indicanuria. Dosage, for adults, 3 to 4 teaspoonfuls of liquid culture 2 or 3 times daily, preferably in sweetened water before meals. Antiseptics internally to be avoided during treatment. Diet: Meat and eggs in limited amount only, or at first prohibited entirely; give buttermilk and milk containing no preservative; fruits and sweets freely; fats, cream, butter, bacon and gelatin; vegetables, if starch digestion good; bread and cereals. *Harrington.* 351

Intestinal Paresis, Postoperative. TREATMENT. Pituitary extract used in 21 laparotomy cases. Dose, 16 minims (1 c.c.), commenced six hours after operation and repeated every few hours until 18 doses given. All patients passed flatus freely within a few hours, and were free of pain and distention. In all cases but 2, bowel action was obtained after a simple enema. Three intramuscular injections of 1 c.c. each recommended during first twenty-four hours as routine practice in laparotomy cases. Pulse rate remains much lower than usual. *Bidwell.* 44

Jaundice, Catarrhal. TREATMENT. Cold injections of water or normal saline solution recommended, favoring biliary flow by promoting peristalsis. *Polain-Cartier.* 38

Laryngitis, Acute. TREATMENT. Freshly powdered cubeb, taken frequently and in moderate amount dry on tongue, found of service in acute throat disorders. *Beverley Robinson.* 47

Leg Ulcers. TREATMENT. Long-continued leg ulcerations are often accompanied by changes in underlying long bones, demonstrable by radiography. Periosteum finally involved. Potassium iodide is of value in these cases. *Coues.* 352

Lichen Planus. TREATMENT. Tar emulsion baths found effective in a severe case: Oil of cade, 50 Gm. (1½ ounces); black soap, 25 Gm. (6 drams); water, 50 Gm. To be added to bath taken daily. *Balzer, Godlewski, and Condat.* Page 485

Lupus. TREATMENT. Pfannenstiel's method found useful in lupus of nasal mucous membranes. Give patient 45 grains (3 Gm.) of sodium iodide daily, divided into 6 doses. Every morning cleanse nasal cavity of crusts with nasal douche containing sodium chloride and boric acid, and, after drying, insert tampon of sterile gauze, in contact with affected parts. Have patient keep tampon constantly moist with 2 per cent. hydrogen peroxide solution. Free iodine is thus liberated from iodide excreted by nasal mucosa, exerting its effect on lesions. In early cases ulcerations heal in one to three weeks. *Sequeira.* 102

Malaria. DIAGNOSIS. Intensely black blood-pigment in the urine considered a pathognomonic sign of malaria. Centrifugalize urine in a clean tube for five minutes and examine drop from bottom under high power. Pigment appears in very fine granules, almost always grouped; somewhat larger granules; large polymorphous masses, and granules inclosed in hyaline plaques or leucocytes. *Viriola.* 232

Mastoiditis. DIAGNOSIS. A small mastoid process with thick outer cortex and small antrum is especially subject to "atypical" mastoiditis, condition escaping detection until serious complications appear. Suspicious symptoms in such cases are: 1. Discharge from ear more profuse than one would readily expect from middle ear alone and continuing profuse for two or three weeks. 2. Increased swelling of posterosuperior wall of external auditory canal. X-ray found useful for early diagnosis in a number of cases. *Crockett.* 41

Blurring of outline of tip of mastoid elicited by grasping both mastoids anteriorly and posteriorly between fingers and noting difference of definiteness of outline on the healthy and abnormal sides found valuable as corroborative evidence in early, doubtful cases of mastoiditis. Swelling from otitis externa may be confusing, but this is usually reduced in a few days by local treatment and ice-bag, while blurring of mastoid remains. *Alderton.* 104

Melæna Neonatorum. ETIOLOGY. Condition ascribed to oral infection; "mouth-cleansing" after birth considered inadvisable, giving chance for introduction of organisms. TREATMENT. Desperate case saved by injections of human blood-serum, doses of 20, 18, 10, 6, 18, 14, and 6 c.c. being given in four days. Method of securing serum was ordinary venesection (after careful skin cleansing), serum being allowed to separate spontaneously from clot in ¼-liter flasks. Injections made with antitoxin syringe anywhere from scapulæ to buttocks. *Nicholson.* 172

Myxedema. DIAGNOSIS. Where, in presence of puffy eyelids or dyspnea, physical examination does not yield evidence of renal or heart lesions, the existence of incipient or incomplete myxedema should be suspected. Therapeutic test—thyroid preparations in moderate dosage for a month—will confirm or disprove existence of hypothyroidism. *Butler.* 348

Nasal Accessory Sinuses, Inflammation of. TREATMENT. In acute cases: 1. Calomel followed by a saline, then by diaphoresis with hot lemonade. 2. Liquid diet. 3. Acetylsalicylic acid or hexamethylenamine, to reduce suppuration. 4. Atropine sometimes valuable, but to be used with care. 5. Locally, application with cotton swab of 2 per cent. cocaine solution, followed by epinephrin, then by 4 per cent. antipyrin. Spray of epinephrin in alkaline medium every two or three hours. 6. After thorough contraction of mucosæ, clear opening of sinus or sinuses with swab and irrigate nose gently with warm saline solution containing a little sodium bicarbonate. 7. Oily spray of menthol and camphor. 8. Mild suction with exhaust bulb or Brawley apparatus. 9. Leucodescent lamp to relieve discomfort. 10. Hot applications. 11. Irrigation of sinuses (difficult, sometimes impossible without removal of bone). If condition unrelieved in a few days, operation. In subacute cases, same treatment + autovaccines. Latter also useful to hasten recovery in acute cases. *Miller.* 173

Nephritis. TREATMENT. Mild forms of nephritis probably often recover after renal decapsulation (doubtless some of these would recover under medical measures). In a case of acute interstitial nephritis with miliary abscess formation, patient recovered apparently because of decapsulation and scarification of cortex. Patients with high-grade parenchymatous change may be given a respite for six months to several years, but their symptoms will probably eventually recur; in such cases, a secondary decapsulation is to be considered. In parenchymatous nephritis with marked general edema, relief is generally so transient as to make operation of questionable value. *Babcock.* 257

Following diet useful in protecting patient with early chronic interstitial nephritis from ultimate failure of circulatory balance: Breakfast: Large helpings of bulky fruits; an egg and 2 thin slices of bacon; a slice of bread, or an equivalent of toast, muffin, waffles, cereal, etc.; tea, cocoa, coffee, milk, water, or carbonated water. Luncheon: Large helping of some vegetable salad, with pickles, olives, or other relish; a moderate amount of cheese; breads and liquids as at breakfast. Dinner: Vegetable, milk, or cream soup; piece of meat, fowl, fish, or game, about 2 x 2 x ½ inch in size; gravies in moderation; freely of all kinds of succulent vegetables, though moderately of potato, rice and other starchy foods; breads and liquids

as at breakfast; a simple dessert. Total of food taken should be smallest which will maintain nutrition at highest level, as judged by body weight and sense of well-being. Where tendency to increase of weight, reduce amount of bread, potato and other starchy foods, and *vice versâ*. Upon rising and two and one-half or three hours after meals, a small glass of water or carbonated water should be taken. Moderate physical exercise desirable; if impossible, replace it by massage. Take body weight, measure all liquids taken and voided, and examine urine, weekly. Once in four weeks, give 2 freshly made 5-grain pills of mercurial mass every night for three days, followed the first time by ½ ounce of castor oil in morning, and the other two mornings by a saline. *Wells.* Page 354

Osteomalacia. TREATMENT. Daily doses of 3 to 5 dessertspoonfuls of a 0.01 per cent. solution of phosphorus in codliver oil, with rest in bed and baths as adjuvants, used with success in 6 cases of senile osteomalacia. *Reich.* 356

Otitis Media, Acute. TREATMENT. Relation of acute pharyngitis, nasal-sinus, middle-ear, and mastoid inflammations to an "active autotoxic state" of the system emphasized. Calomel in $\frac{1}{10}$-grain (0.006 Gm.) doses, frequently repeated up to 1 or 1½ grains, found valuable to stimulate defensive powers of body and shorten convalescence. Used in combination with local treatment. Calomel, followed by castor oil or salines, given every other day. *Snow.* 42

Pain, Local. TREATMENT. Combination of menthol and methyl salicylate in hydrated wool-fat, covered with cotton and gauze bandage, recommended to relieve local pain where skin is intact. *Beverley Robinson.* 47

Paralysis Agitans. DIAGNOSIS. New sign, present in the early period of rigidity, when diagnosis difficult, described. Consists of a "cog-wheel," intermittent resistance felt when examiner grasps wrist with one hand, steadies arm above elbow with the other, and makes rapid flexion and extension of arm. Never found present in other diseases. *Moyer.* 176

Paralysis, General. TREATMENT. Salvarsan administered intravenously in a case of paresis in maniacal stage, with marked improvement. *Holland.* 73

Two cases reported in which salvarsan was of distinct benefit. *Daland.* 298

Pellagra. TREATMENT. 1. In mild or apparently cured cases: Moderate amount of exercise and fresh air, avoiding direct sunlight; varied diet, with some fruit and green vegetables, but no corn or its products. 2. Arsenic in large doses early in disease, later only in small doses. In early stages, give soamin hypodermically, starting with 1 grain every other day and increasing up to 3 or more grains to the dose until 75 to 100 grains have been given, followed by two weeks' rest, then resumption if necessary. For internal use, Donovan's solution apparently best. 3. Massage and hydrotherapy; give daily salt baths at body temperature, rubbing coarsely powdered salt, just moistened, vigorously all over body, a handful at a time. 4. For skin lesions: Moist boric acid dressing or ointment of boric acid or zinc oxide ointment usually suffices at first. Where epithelial regeneration going on and surface moist, paint occasionally with weak picric acid solution. Where sloughing and suppuration, wash daily with hydrogen peroxide and dust aristol or bismuth formic iodide lightly upon surface; autogenous vaccine may limit extension. Where desquamation, dryness and thickening, give daily salt rub and massage with lanolin or cocoa butter. 5. For gastro-intestinal symptoms: Give mixture of 20 drops of dilute HCl or nitrohydrochloric acid with 1 dram of essence of pepsin and 10 drops tincture of nux vomica after each meal. Where vomiting, use mixture of cerium oxalate, chloretone and bismuth subnitrate, and where excessive diarrhea, use 1 dram or more of bismuth with phenyl salicylate and albumin tannate. 6. Where marked inanition: Gradually increasing doses of thyroid extract for a few weeks. Eliminate intestinal parasites where present. *Leroy.* 356

Pharyngitis. TREATMENT. Where swollen lateral bands alone present, paint them with zinc chloride solution (gr. xv-f℥j) or touch with galvanocautery. "Nervous cough" is often kept up by swelling of the lateral bands; these should then be painted gently with deliquescent trichloracetic acid, followed by brushing with sodium carbonate. *Grant.* 363

Placenta Prævia. TREATMENT. Absolute quiet, rupture of membranes when required, and irrigation with hot water recommended. Water should be at 45° to 48° C. (113° to 118° F.), and at least 7 or 8 liters of it should be used. Repeat irrigation if necessary to check hemorrhage. Seventy cases thus treated without a death. Infection from tampon and mishaps in version or introduction of bag thereby avoided. When hemorrhage arrested, spontaneous expulsion of fetus to be patiently awaited. Instrumental dilatation contraindicated. *De Bovis.* 44

Pleuritis. DIAGNOSIS. X-ray studies showed that location of fluid in chest in serofibrinous pleurisy depends upon the position assumed most constantly by patient during acute stage, and that exudates of this type are but slightly, if at all, mobile. These facts are of assistance in differentiation of serofibrinous from other varieties of effusion. *Engelbach and Carman.* 106

Pneumonia, Lobar. TREATMENT. Creosote inhalations and moderate bloodletting, especially with leeches, recommended. *Beverley Robinson.* 47

Stock pneumobacterins, in doses of 25 to 600 millions, used in 20 cases, with 15 per cent. mortality; 30 other similar cases, under usual methods of treatment, showed 40 per

cent. mortality. In some of the cases, strikingly prompt benefit followed use of bacterins; in others results were less marked or *nil*. Results seemed more definite with the larger doses. Dosage can be adjusted according to clinical phenomena; where malaise, headache, chilliness, or definite rigors, with rise of temperature, follow an injection, it is unwise to increase dose. *Robertson and Illman.* Page 107

Intramuscular injections of quinine and urea hydrochloride used in 192 cases of lobar and lobular pneumonia; mortality 12 per cent. Initial dose, 15 to 25 grains (1 to 1.6 Gm.), repeated in three or four hours, and perhaps once or twice again in first twenty-four hours. Same plan on second day of treatment, and on third, if necessary. Smaller doses, 5 to 10 grains, then sometimes continued by mouth. Results: Temperature and pulse rate gradually fall, respiration more rapidly; termination by lysis in five to twelve days. Procedure in injecting: Paint skin with iodine tincture, fill syringe with 50 per cent. solution of the quinine salt in sterile water; inject deeply into a muscle, emptying syringe thoroughly; withdraw needle, and seal puncture with collodion; no local ill results. Additional treatment: The usual hygienic and drug measures; saline infusion; sodium bicarbonate or ammonium compounds in sufficient amount to keep urine alkaline; tincture of ferric chloride when quinine withdrawn. *Solis-Cohen.* 235

In cases with blood-pressure below 110 mm. Hg and other symptoms of vasomotor paresis present (pulse soft, cyanosis not prominent, extremities warm), epinephrin in 10-minim (0.6 c.c.) doses of 1: 1000 solution should be given intramuscularly, even before signs of pulmonary edema appear. If latter develops suddenly, give 15-minim (1 c.c.) doses every twenty minutes for 4 to 6 doses or until the symptoms are controlled; repeat series of injections later if required. In pulmonary edema accompanying dilatation of heart due to toxic degeneration of muscle or added to the myocarditis of old persons, however, epinephrin will accentuate the dilatation, and is contraindicated. These cases are differentiated by fact that blood-pressure is high,—125 to 170 mm.,—cyanosis is marked from the start, extremities are cold, first heart-sound loses muscular quality, and pulse is small, of high tension, and irregular in frequency and size; physical examination may reveal cardiac enlargement, with descent of apex. *Brown.* 297

Pneumoperitoneum. DIAGNOSIS. In presence of free gas in peritoneal cavity, there occurs a concentric diminution of area of hepatic dullness, *i.e.*, dullness disappears at same time from upper border of liver downward and from lower border of liver upward. In tympanites, on the other hand, liver dullness disappears from below upward only. This distinction found useful in early diagnosis of perforation in typhoid fever. *Berg.* 103

Pneumothorax. DIAGNOSIS. Positive coin test, displacement of heart, and, in right-sided cases, displacement of liver are the most important diagnostic signs, occurring in about 90 per cent. of cases. Succussion splash and metallic tinkle occur in 30 or 40 per cent. *Cruice.* 46

Poisoning by Acids. TREATMENT. Case of sulphuric acid poisoning reported in which, when patient comatose, intravenous injection of 300 c.c. of a 5 per cent. solution of sodium carbonate caused immediate return of consciousness. Ultimate recovery. *Marchand.* 357

Poliomyelitis, Acute. ETIOLOGY. Poliomyelitis is propagated by dust. Nasopharynx is probably point of entry. *Neustaedter and Thro.* 46

DIAGNOSIS. Lumbar puncture shown to be valuable in distinguishing poliomyelitis of meningeal type from acute cerebrospinal meningitis. Negativity of cerebrospinal fluid in poliomyelitis diagnostic; in meningitis, fluid shows marked turbidity, coarse clot formation, great excess of albumin, copious deposit of polymorphonuclear cells, and meningococci. *Forbes.* 46

Importance of thoroughly cleaning out alimentary canal at earliest period of disease emphasized; copious enemata high up found useful. Retention of urine may also require treatment with warm baths, hot compresses to abdomen, or, ultimately, catheterization. *Bogardus.* 175

Postnasal Catarrh in Children. TREATMENT. If condition acute, paint throat several times daily with boroglyceride, or, in older children, spray with a ¼ grain to the ounce solution of tartrated antimony while patient inspires deeply. Later, add an equal amount of glycerite of tannin to the boroglyceride. Where painting throat resisted, instill into nostril several times daily, while child lies back with head on pillow, a solution of 5 to 10 grains of resorcin to the ounce of saline solution, 10 grains of boric acid to the ounce of water, or 15 grains of sodium bicarbonate to the ounce. As redness of pharynx fades, apply pure glycerite of tannin or a paint of 12 grains of iodine and 15 grains of potassium iodide to the ounce of glycerin, with 5 drops of oil of cinnamon or peppermint. After all redness gone, use an astringent iron paint of 1 dram of the stronger iron perchloride to an ounce of glycerin. For anorexia: an iron tonic; stay in country or at seaside. Keep child well protected from cold for some time after. *Eustace Smith.* 34

Pruritus. TREATMENT. Venesection to the extent of 100 or 200 c.c., followed by injection of 300 to 700 c.c. of 0.9 per cent. sterile salt solution through same cannula, found to relieve itching at once, with subsequent cure

or marked improvement. Procedure repeated 3 to 6 or more times, at intervals of five or six days. No untoward effects. *Simon.*
Page 365

Pruritus Ani. TREATMENT. Idiopathic pruritus ani believed to be caused by streptococcic infection of skin. In 8 cases treated with autogenous vaccines made from organisms on skin, results were excellent, itching disappearing or growing less after 4 or 5 injections. *Murray.* 359

Psoriasis. TREATMENT. Put patient in warm bath (98° F.), to which, if skin tender and irritated, chamomile and bran or washing soda are added. Rub skin slightly once or twice with green soap, wash off, and remove scales. Next wash with 1: 1000 mercury bichloride, then tar skin well with: Olei rusci, olei fagi pinguis (fresh), of each, 20.0 (3v); alcoholis diluti, 10.0 (3iiss). Patient then remains in bath twenty to thirty minutes, after which tar is washed off and affected parts treated with: Acidi salicylici, 1.0 (gr. xvj); sulphuris præcipitati, 4.0 (3j); zinci oxidi, amyli tritici, of each 1.0 (gr. xvj); petrolati, 25.0 (3vj). Dust talcum powder thickly over parts. Two days later, apply a 10 per cent. ointment of pyrogallol in hydrated wool-fat, followed by talcum, and after two days more, a 25 per cent. ointment of chrysarobin. For psoriasis of face, use following formula: Unguenti hydrargyri ammoniati, pyrogallolis, of each, 1.0 (gr. xvj); unguenti zinci benzoatis, q. s. ad 25.0 (3vj). For psoriasis of scalp, wash with 1: 1000 mercury bichloride. Internally, give phenol and arsenic trioxide in separate pills, to be continued for a longer time than local treatment. Hygiene: Plenty of fresh air and rest. Bland diet, avoiding meat and alcohol, at least for a time. *Bernheim.* 327

Following preparation recommended for addition to baths given for removal of scales: Oil of cade, 50 Gm. (1½ ounces); black soap, 25 Gm. (6 drams); water, 50 Gm. Yolk of egg and a little fluidextract of quillaja may be added. Patient is to soak in bath and rub patches for ten or fifteen minutes. Chrysarobin, 2 Gm. (30 grains), or pyrogallol, 1 or 2 Gm., may also be used in the preparation. Patient is to apply petrolatum to patches in daytime, then take bath, and reapply petrolatum at night. For tar folliculitis, use methylene blue. *Balzer, Godlewski, and Condat.* 485

Psychoses. TREATMENT. Seven cases—4 in children—reported in which pronounced mental disturbances were shown due to dental impaction, alveolar abscess, or other conditions affecting teeth, and cure or great improvement resulted upon remedying these states. Importance of X-ray examination of teeth and jaws in psychoses emphasized. *Upson.* 129

Puerperal Sepsis. TREATMENT. Intravenous injections of mercury bichloride used in 11 cases, with 6 recoveries. Measure considered worthy of trial in severe cases. Twenty drops of a 1 per cent. solution injected once or twice daily; 1 to 4 grains of bichloride used during the treatment. Precautions necessary: 1. Teeth to be carefully cleansed. 2. Salines to be omitted during treatment. *Stowe.* 110

Outdoor treatment of severe puerperal infections found usually to bring about rapid improvement and to lower mortality by nearly 20 per cent. Sunlight as important as air. Patients kept out of doors on a wheel bed, to be moved in again when necessary. General condition strikingly well maintained in the prolonged pyrexias. Other measures: Iron, arsenic, strychnine, alcohol, fluids copiously by mouth, saline enteroclysis in severe cases, alcohol and cold sponge baths for pyrexia, hot or cold applications for abdominal pain and distention. Curettage contraindicated, increasing mortality 10 per cent.; local treatment to be limited to a single intrauterine douche of sterile salt solution. *Young and Williams.* 236

Pulmonary Abscess. TREATMENT. Inversion of patient found effective for evacuation of pus in a case of pulmonary and hepatic abscess; rapid recovery. Postural method suggested for trial in lung abscess and bronchiectasis before resort to surgery. *McKechnie.* 486

Quinsy. TREATMENT. Early probing advocated, in order to drain pus-accumulation at its inception. With aid of reflected light and tongue depressor, tonsillar fossæ, especially upper ones, are entered in turn by means of a tonsil slitter or probe. Where bottom appears soft, rounded point of instrument is pushed deeper into tissues, capsule pierced, and peritonsillar space entered. The small amount of pus thus evacuated gives a sense of relief and infection stops. This can be carried out in about 8 out of 10 cases. It is practically painless and bloodless. *Schuster.* 360

Raynaud's Disease. TREATMENT. Apply liquid ichthyol in 10 per cent. strength locally. Internally, large doses of potassium iodide are very beneficial. Rest in bed and hot applications of some antiseptic solution to the affected members are useful. Where gangrene, amputation may be all that is necessary, but healing is tedious. *Beck.* 298

Renal Traumatism. TREATMENT. After crushing injuries of renal substance spontaneous repair is usual. Operation should not be done unless there is evidence of intraperitoneal leakage, progressive hemorrhage, urinary extravasation, or sepsis. *Babcock.* 257

Rheumatism, Acute Articular. TREATMENT. *Streptococcus pyogenes* vaccine used in 6 cases, in 4 of which no salicylates were given, with good results. Temperature quickly fell in every case, pain ceased, and inflammatory phenomena disappeared. Stock vaccine from several strains of streptococcus used in these cases, but author thinks it pref-

erable to employ a mixed streptococcus and staphylococcus (*aureus* and *albus*) vaccine. *Wolverton.* Page 48

Rheumatism, Chronic. TREATMENT. In rheumatic conditions associated with anemia and in sore throat of rheumatic origin, following mixture recommended: Dissolve 1 dram (4 Gm.) of sodium salicylate in 2 ounces (60 c.c.) of water. Add liquor ferri perchloridi, plus an ounce of water, giving dark purple mixture. Then add 1 dram of potassium bicarbonate dissolved in 1 ounce of water, and fill up bottle to 8 ounces with water. *Drinkwater.* 51

Lime-poor diet found useful in certain forms of subacute and chronic arthritis, especially deforming arthritis, cases with joint pains following acute polyarthritis, and cases of chronic spinal ankylosis. Cases should be selected by test-diet, to make sure of calcium retention, as other patients will not respond to the treatment. Articles of food allowed in lime-poor diet: White or aleuronat bread, rice, tapioca, wheat flakes, sago, tomatoes, mushrooms, white of egg, meat bouillon, beef, calves' liver, tongue, sweets, vegetable fats, light beer, carbonated waters, port. Distilled water to be used in preparation of food. After six or eight weeks restrictions may be somewhat relaxed. *Hirschberg.* 110

Combination of sodium citrate with salicylate recommended: Sodii citratis, 30 Gm. (7½ drams); sodii salicylatis, 20 Gm. (5 drams); aquæ, 120 Gm. (30 drams): one teaspoonful in a cup of hot water half-hour before each meal and at bedtime. *Hemenway.* 417

Rhinitis, Chronic. TREATMENT. To clear and moisten nasal passage, following formula useful: Sodium chloride and salicylate, of each, 45 grains (3 Gm.); sodium borate and potassium chlorate, of each, 96 grains (6.5 Gm.); glycerin, 1 dram (4 c.c.); water, 6 ounces (200 c.c.). Two teaspoonfuls of this are to be added to 1 ounce of warm water and used to spray or sniff up nostrils occasionally. When fetor present: Phenol, 1 grain (0.06 Gm.); sodium bicarbonate, 4 grains (0.24 Gm.); warm water, 1 ounce (32 c.c.). To dissolve away purulent discharges: Sodium sulphate, 20 grains (1.3 Gm.) to the ounce. Where recurrent catarrh due to intranasal irregularities, remove latter. If surgery inadequate, use vaccines, and if sinusitis present wash out sinus daily for a week with a warm antiseptic solution. Where discharge accumulates in nasopharynx, use mixture of menthol, 10 grains (0.6 Gm.), and spirits of wine, 1 dram (4 c.c.) to 1 ounce (30 c.c.) of water, 1 dram of which is placed in ¾ pint of nearly boiling water and the vapor inhaled through mouth and exhaled through nose for ten minutes every two hours. Discharge may be thinned and partially removed by sniffing up nostrils a warm antiseptic alkaline lotion, after which an ointment of menthol, 4 grains (0.25 Gm.), and eucalyptol, 20 minims (1.25 c.c.), to 1 ounce (32 Gm.) of yellow petrolatum may be used. *Stuart-Low.* 422

Rhus Poisoning. TREATMENT. Aluminum acetate solution recommended for local application (*v.* Furuncle). *Stansbury.* 227

Ringworm of Scalp. TREATMENT. Ionic method of introducing antiseptics into tissues advised in preference to X-rays, which occasionally lead to permanent alopecia. Drugs used: mercuric chloride, 1 per cent., or aqueous iodine solution, 1 per cent. Lint soaked in solution is applied evenly to surface and secured by a bandage. Copper gauze used as electrode. Other pole of electric supply is attached to water bath in which child's arm or foot is immersed. Increase current slowly to 15 or 20 milliampères and continue for forty-five minutes. Sittings 2 or 3 times weekly; average total number, 13. Continuous series of 53 cases cured. Have head washed daily with sulphur, betanaphthol and green soap mixture. *Riddell.* 360

Sciatica. TREATMENT. Where acute attack, in spite of the usual measures, persists longer than ten to fourteen days, sulphur baths or hot carbon dioxide baths (102.7° to 104° F., and lasting twenty minutes) should be employed, or heat applied in other ways. If ineffective, author counsels treatment by injections of saline solution and air: 1. Injection of 800 to 1000 c.c. of air, filtered through cotton, under skin on outer aspect of leg. 2. Injection of 60 to 80 c.c. of 0.8 per cent. salt solution, with 0.01 to 0.02 Gm. of novocaine added, just below sacrosciatic notch, as close to nerve as possible. 3. Injection of 10 to 20 c.c. of salt solution, with 0.01 Gm. of novocaine into epidural space of inferior lumbar region, needle being passed in and up through coccygeal notch; preliminary anesthesia of course of injection with novocaine. 4. Where very severe pain and contractures of lumbar muscles, injection of 10 to 15 c.c. of salt solution between third and fourth lumbar vertebræ into epidural space. Injections to be repeated at intervals of three or four days, substituting 1 to 1.2 per cent. for 0.8 per cent. saline. Two to five series of injections cure obstinate cases. *Sicard.* 114

Semilunar Cartilage of Knee, Dislocation of. TREATMENT. Mold piece of sole leather 4 inches long and 1¾ inches wide to inner side of knee, first soaking it in water and cutting edges smooth. Fasten over the displaced cartilage by adhesive straps—2 vertical, 1 horizontal, and 1 oblique—and cover with fairly firm bandage. Patient may walk as usual, notwithstanding soreness. Bandage renewed every ten days. After 3 such treatments condition is well, an aseptic adhesive inflammation having taken place, and only a bandage need be used. *Chandler.* 171

Sinuses. TREATMENT. Following paste used with success in treating a discharging sinus in a breast cancer, after Beck's paste had failed: Bismuth subnitrate, 30 Gm. (1

ounces); petrolatum, 60 Gm. (2 ounces); white wax and paraffin, of each, 5 Gm. (80 grains), and iodine tincture, 2 Gm. (30 minims). The tincture is added after other ingredients mixed. Paste to be stirred when used. Where large amount to be employed, diminish proportion of iodine. *Green.*
Page 177

Small-pox. TREATMENT. Mixture of 10 per cent. iodine and 90 per cent. glycerin painted over pustules 2 or 3 times daily in 85 cases; caused drying of lesions and arrest of tissue destruction, and prevented pock-marks. Pustules on face may be opened with sterile instrument and touched with iodine tincture. Desquamation frequently almost completed in four to six days. All cases recovered. *Rockhill.* 115

Splanchnoptosis. TREATMENT. Simple method of supporting viscera described: Shave hair from lower abdomen; place strip of zinc oxide adhesive plaster 2 to 2½ inches wide by 5 to 6 inches long across extreme lower abdomen; attach to each end of it a bandage of same width to reach around body above iliac crest and be fastened behind; have bandage well padded with cotton. Avoid skin irritation by plaster by removing it occasionally, cleansing skin, and using a dusting powder. Improve general and local muscular tone by means of massage, electricity, treatment of gastro-intestinal tract, correct living, and suitable diet. *McCuskey.* 238

Syphilis. TREATMENT. Salvarsan given intravenously in 10 pregnant women in doses of 0.5 Gm. and subcutaneously in 8 newborn infants in doses of 0.03 Gm. Injections in women in dose mentioned found to be not without danger to fetus, pronounced weakening in heart-sounds being noted in days succeeding injection in one-half the cases. Child of a mother given first injection of salvarsan five and one-half months before parturition was born healthy; a child born seventy-two days after salvarsan injection was syphilitic. In the newborn, salvarsan was found to act promptly on pemphigus and to cause disappearance of spirochetæ from lesions; it is capable of producing prompt and lasting recovery from hydrocephalus of syphilitic origin. Smaller doses now advocated by author: 0.2 Gm. for pregnant women, repeated in six days; 0.01 for newborn infants, repeated twice or thrice at six-day intervals. *Bar.* 49

Emulsion of salvarsan in lanolin oil found a satisfactory mode of administration in 30 cases. *Burke.* 50

Case of advanced cardiovascular syphilis, in association with greatly enlarged liver and glycosuria, under treatment for nine months, in which, while Wassermann reaction was but slightly influenced, glycosuria disappeared permanently, even though sugars and starches were given freely; liver returned almost to normal size and circulation was greatly improved. *Daland.* 298

Sodium cacodylate used in 43 cases, each patient receiving 14 to 16 injections on successive days. Fresh solution of the drug, 1 in 15 of distilled water prepared daily. Injections at first subcutaneous, then intramuscular. Dosage: 3 grains daily, increased as results noted up to 5 or 6 grains. No untoward effects except, rarely, slight muscular pains or spasm. Conclusion reached: Drug useful in syphilis, giving results not unlike those of salvarsan, though less rapid. Best effects in early syphilis, on initial lesion, maculoroseolar or papular eruption, mucous patches and condylomata; also has an excellent alterative effect. Place patient on mercury immediately after course of cacodylate injections ended. *Spivak.* 362

Best results are obtained by use of salvarsan followed by mercury. Give repeated doses of former, to prevent relapses, making 3 or 4 injections at intervals of about eight weeks, unless relapse occurs earlier, when an injection should be given at once. Exception to this rule should be made where Wassermann is repeatedly negative after first or second injection of salvarsan, and all symptoms have disappeared. Salvarsan does not produce strains of spirochetes resistant to itself, as formerly supposed. *Anders.* 385

Rectal administration of salvarsan considered useful as substitute for intravenous or subcutaneous methods in cachectic cases or those with cardiovascular lesions. Suppositories of cocoa butter containing 0.1 Gm. of drug used. Introduced in late afternoon, suppository is absorbed by next morning. Slight local irritation for two or three hours induced; may be prevented by adding a little cocaine to suppository. To adults, 0.6 Gm. altogether is given, 1 suppository being used every week for six weeks. *Bagrow.* 488

Tabes Dorsalis. TREATMENT. Salvarsan administered intravenously in 4 cases, along with hydrotherapeutic measures, with striking improvement. *Holland.* 73

Two cases reported, under treatment for over a year, in which lancinating pains were controlled, muscular inco-ordination improved, and Wassermann reaction became negative. *Daland.* 298

Tachycardia, Paroxysmal. TREATMENT. Attack of tachycardia in a woman relieved as follows: Patient being seated, physician's right hand was placed flat over heart, left hand on back, and patient directed to take deep breath, close glottis, and fix strongly walls of chest. Chest walls were then squeezed with some force, attempting to exert pressure on upper part of heart. Immediate relief and fall of pulse rate from 220 to 110. *Rich.* 233

Tapeworm. DIAGNOSIS. Deep pétrissage of abdomen recommended as aid to diagnosis of tapeworm. Series of circular movements executed by hand in direction of large intes-

time with enough energy to cause thorough kneading of abdominal contents. Procedure harmless and reveals worms sometimes when purgatives have failed. Three or four fifteen-minute applications of deep pétrissage generally required. Administration of purgatives in cases where contraindicated thus avoided. *Cyriax.* Page 426

Tetanus. TREATMENT. Phenol injections used in 5 consecutive cases, all recovering; 2 other cases treated with antitoxin died. Ten minims of 10 per cent. solution of pure phenol in sterile water, diluted to 30 or 40 minims, injected deep into muscles, at first every three hours, later at longer intervals as improvement appeared. Injections made into buttocks, deltoids, or pectorals. No untoward results. Urine, however, should be watched for smoky color, as a precaution. Severity of convulsions always diminished by the treatment, sometimes after third or fourth dose. In fully developed cases, second dose to be given one hour after first. Original wound to be excised or cauterized, as usual, with strong solutions of phenol, silver nitrate, or nitric acid. *Kintzing.* 115

Tetany. TREATMENT. Removal of whey from food given to infants with tetany found advantageous. Suspension of curds of wheyless milk proved useful as food. Best prepared as follows: Bring milk to a boil, then cool to 107° F. Add chymogen, 1 dram to the quart, and keep at 107° for half an hour. Strain through cheesecloth and allow to drain an hour. Finally, put curds through fine-meshed sieve, and suspend in a solution of arrowroot flour (1 level tablespoonful to the quart). *Grulee.* 230

Tonsillitis, Acute. TREATMENT. Tincture of iodine applied locally in 400 cases in children, with unusually prompt cures. Also used in pharyngitis, otitis media, tonsillar and nasal diphtheria, laryngitis, stomatitis, etc. For a milder application deep down in throat or in nose, equal parts glycerin and iodine tincture is satisfactory. In acute contagious diseases applications of iodine tincture to throat are of prophylactic value, combating spread of infection. *Sill.* 171

Brushing with 10 per cent. menthol and 3 or 4 per cent. guaiacol in olive oil often has good effect. *Grant.* 363

Trachoma. TREATMENT. Subconjunctival injections of diphtheria antitoxin used in 50 patients, 30 being practically cured and 20 greatly improved. After turning lids, eyes first washed with boric acid and saline solutions, then 1 c.c. fresh antitoxin injected in each lid from within outward. Lids then returned to normal position and another cubic centimeter injected under skin and muscle of upper lid. Inflammatory reaction for thirty-six hours, then disappearance of granules. Three or four such treatments given successively. *Pachopos.* 178

Tuberculosis. TREATMENT. Tuberculin applied locally in 10 cases, comprising suppurative cervical adenitis, anal fistula, and sinuses, with early cures in previously rebellious cases. Parts first irrigated with salt solution, then tuberculin solution sprayed on, or, in sinuses, introduced with syringe and flexible cannula. Mouth of sinus sealed with collodion for several hours. Initial dose must be small; later dose is carefully increased, avoiding general reaction. Locally there is pronounced reaction at first, then stimulation of processes of repair. *Beasley.* 56

Tuberculosis, Laryngeal. TREATMENT. Yeo's continuous respirator will check cough in this condition. Preparation generally used: Creosote, 3iij (12.0); spirit of chloroform, oil of Pinus sylvestris, of each, 3iss (6.0); oil of cinnamon, oil of citronella, of each, ♏v (0.3); menthol, gr. v-x (0.3-0.6). *Grant.* 363

Tuberculosis, Pulmonary. DIAGNOSIS. Hemoptysis occurring without warning in young adults, and unassociated with further signs or symptoms of tuberculosis, is probably of tuberculous origin and should be so treated. Hemoptysis in pneumonia, bronchitis, asthma, or following trauma should lead to suspicion of an underlying tuberculous process. *Bartlett.* 101

TREATMENT. Citrate of iron hypodermically found very efficient in relieving the secondary anemia in 257 cases, 70 per cent. of which were advanced or far advanced cases. Employed routinely where reduction in hemoglobin greater than 10 per cent. Dose, 0.05 Gm. (⅚ grain), injected in buttock. Italian preparations found least irritating. Maximum benefit attained after 30 to 40 consecutive daily doses. *Bullock and Peters.* 32

Comparative study of 146 cases receiving tuberculin and 234 treated by hygienic-dietetic method alone. Conclusion reached that tuberculin is valuable in tuberculosis, especially in moderately advanced cases, and is of special value as a protection against relapse. Autogenous vaccines used in 75 other cases; temperature rapidly returned to normal, expectoration diminished, and hemorrhage was rare. *Petit.* 57

Creosote carbonate, 10 grains in capsules every three or four hours, used with satisfaction in cases of tuberculosis with sudden symptoms of pneumococcic infection (shown by malaise, moderate rise of temperature, followed by bloody sputum and preponderance of pneumococci in saliva). *F. N. Robinson.* 152

Treatment of cough discussed. Facilitate early morning cough with glass of hot water or milk with or without 1 dram of whiskey or brandy, 5 or 10 grains of sodium bicarbonate, or a little Saratoga Vichy. For irritative cough, avoid sources of irritation, such as rapid talking, laughing, smoke, etc.: control the desire to cough. Deep-breathing exercises, change of position in bed, sucking ice, sipping orange juice, demulcent lozenges. Where pharyngeal irritation, use slightly as-

tringent lozenges: Ext. grameriæ, potassii chloratis, ana gr. xv (1); olei menth. pip., mj-ij (0.06-0.12); ext. glycyrrhizæ puri, 3iiss (10); ft. in trochiscos no. xxx. Steam inhalations, with 3j-ij of cpd. tr. of benzoin or oil of pine to a pitcher of hot water. Where bronchial secretions abundant: Inhalation from perforated zinc mask (Robinson's inhaler) of 10 drops of equal parts of alcohol, creosote, and chloroform. For pharyngeal irritation, also try sprays of 1 per cent. menthol or pine oil in benzoinol or albolene, or a mixture of equal parts of menthol, camphor, and eucalyptol in 100 parts of benzoinol. For night cough: Warm drink before retiring; warming the bed; cross binder, above and below shoulders and across chest and back, previously dipped in cold water (60° F.) and covered with similar dry cross binder and a flannel jacket; renew in three hours or leave on all night. Strapping chest, where pleurisy. Sometimes counterirritation with iodine tincture or blisters over the apices or other site of irritation. For nervous cough: Bromides in 10- to 20- grain doses, chloral hydrate in 5-grain doses, or a combination of the two. Where wheezing and much secretion: Belladonna tincture, 10 to 20 minims, or atropine sulphate, gr. $\frac{1}{100}$ to $\frac{1}{50}$. Codeine, gr. $\frac{1}{12}$ at first, then $\frac{1}{8}$ or $\frac{1}{4}$ every two hours; heroine, in smaller doses; finally morphine, $\frac{1}{24}$ grain, increased if necessary. For abundant expectoration: Respiratory exercises, change in position, cross binder, and especially creosote inhalation and atropine. *Meara.* Page 239

Typhoid Fever. DIAGNOSIS. Russo's test found a valuable diagnostic aid in early cases. To 4 or 5 c.c. of patient's urine add 4 drops of 0.1 per cent. aqueous solution of methylene blue. After thorough admixture examine against light; a mint- or emerald-green color is positive, whereas any bluish tint renders test negative. Urines containing bile also give the test; therefore, this must first be excluded. *Rolph and Nelson.* 58

Early recognition of perforation facilitated by observation of concentric diminution of liver dullness. (See Pneumoperitoneum.) *Berg.* 108

Careful, repeated leucocyte counts claimed to afford earliest reliable means of typhoid diagnosis for general practitioner. Characteristic leucocytic picture: 1. Leucopenia, progressive, very likely preceded by slight leucocytosis. 2. Initial moderate polynucleosis, lasting first four to eight days. 3. Progressive, marked lymphocytosis, displacing polynucleosis and lasting well into recovery. 4. Increase in large mononuclears, beginning with onset of disease. 5. Sudden, early, and complete disappearance of eosinophiles. *Hultgen.* 116

New test for typhoid fever described: With fine hypodermic needle inject a few drops of suspension of dead typhoid bacilli, made by taking 1 drop of 1000 million vaccine and mixing it thoroughly with 20 drops of sterile saline solution. Inject intradermally and as superficially as possible. Typhoid patient shows absolutely no reaction, while non-typhoid patient shows an area of well-marked redness disappearing forty-eight hours after injection. *Prendergast.* 300

TREATMENT. Ipecac used in 6 cases with good results. In every case but 1 patient became afebrile within four days. Dose in the earlier cases, 30 grains (2 Gm.) on first evening, diminished daily by 5 grains down to 10 grains (0.65 Gm.); in other cases, 10 grains morning and evening, later decreased to 10 grains once daily; drug was given in salol-coated pills, preceded by tincture of opium to prevent vomiting. *Frazier.* 103

Lumbar puncture twice performed in a case with intense, persistent headache, second puncture bringing relief. *Oddo and Monges.* 178

Uncinariasis. TREATMENT. Beta-naphthol in 3 doses of 30 grains each at intervals of two hours, followed, again in two hours, by 6 drams of magnesium sulphate, found to expel 97.52 per cent. of total number of hookworms present. Thymol, in same dose, expelled 97.87 per cent., but caused serious constitutional disturbance. A 60-grain beta-naphthol treatment expelled 86 per cent. It was given as follows: Beta-naphthol, 4 drams (16); mucilage of tragacanth, 1 ounce (32); peppermint water, to make 6 ounces (192). *Nicol.* 230

Uremia. DIAGNOSIS. Depression of reflexes and positive Babinski phenomenon found valuable as a very early indication of oncoming uremia. Present in the stage of "preuremia." *Curschmann.* 48

Urethritis. DIAGNOSIS. Improved method of differentiating anterior from posterior urethritis described. Slowly inject 1 c.c. of 0.5 per cent. aqueous solution of basic fuchsin into anterior urethra and have it retained one-half to one minute, with slight massage. Allow fluid to escape and have patient urinate in 2 high glasses. If only stained shreds are present, there is no posterior urethritis; if only white, unstained shreds, infection is in posterior urethra; if both stained and unstained, process is both anterior and posterior. *Wolff.* 118

Urticaria. TREATMENT. Venesection followed by injection of salt solution proved useful in some cases. (V. Pruritus, Treatment.) *Simon.* 365

Vaccination Site. TREATMENT. Picric acid applied to vaccinal lesion in 22 children, to harden tissues and prevent local infection. Four per cent. solution in 95 per cent. alcohol painted over and around vaccinal site forty-eight hours after vaccination and daily thereafter. Inflammatory reaction and constitu- with success of vaccination. *Schamberg and Kolmer.* 118

Valvular Disease, Cardiac. DIAGNOSIS. To determine whether a murmur is systolic

or diastolic when rate is rapid or murmur unusual, make intermittent pressure on radial artery to correspond in time with the murmur; if the finger, pressing synchronously with the murmur, feels the radial pulsations, murmur is systolic; if not, diastolic. *Long.* Page 167

Varicose Ulcers. TREATMENT. Stimulate granulations with silver nitrate (30 grains to the ounce), cover ulcer with sterile gauze, and apply long adhesive straps to skin on either side of lesion till skin well wrinkled. Have foot elevated on pillows till it returns to normal size. Change adhesive straps upon alternate days or oftener. Massage and attention to bowels. Linen elastic stockings, put on over white stockings to absorb perspiration, after ulcer cured. *Gills.* 178

Following method found effective in healing ulcers resistant to other forms of treatment: Place patient under deep anesthesia; remove all crusts surrounding ulcer; pour on tincture of green soap and sterile water, and scrub the ulcer with an ordinary stiff brush, previously thoroughly sterilized. Continue scrubbing, washing off *débris* with clean water, until base of ulcer is smooth and edges stand out clearly, red and hard. Paint ulcer and immediate vicinity with tincture of iodine, and apply wet boric or bichloride dressing. Pain generally complained of after recovery from anesthetic, but if bandage is kept moist with warm solution it soon ceases. Granulation soon sets in at many places, and repair is rapid and satisfactory. *Beck.* 300

Vincent's Angina. DIAGNOSIS. Signs distinguishing it from lacunar tonsillitis are: 1. Absence of fever. 2. Pain more localized on affected side, and is severe, lancinating. 3. General malaise and physical exhaustion very marked.

TREATMENT. First perform gentle curettage of the tonsillar crypt involved. Then apply 12 per cent. silver nitrate solution. *Wherry.* 58

Salvarsan used locally, first in solution, then in powder, in a severe and obstinate case; prompt recovery. *Achard and Flandin.* 118

Vomiting of Pregnancy. TREATMENT. 1. Magnesium carbonate, 2 drams; magnesium sulphate, 1 ounce; mint water (1:40), 1 ounce; water, to make 8 ounces; wineglassful to be taken early in the morning. Cascara given daily in small doses for two or three weeks. 2. Simple diet; evening meal to consist only of thin porridge, gruel, or arrowroot. Koumiss; champagne, ½ hour before a meal. 3. Where relief from nausea only obtained after complete evacuation, encourage latter by the sipping of warm water. 4. Absolute recumbency in severe cases. 5. Drugs: Effervescing mixtures, salicin emulsion, phenyl salicylate, compound tincture of cardamom in dram doses, antipyrin or acetanilide with sodium bromide, small chloral and potassium bromide enemata, wine of ipecac in hourly minim doses; validol found most effective drug; menthol, 1 part in 60 of water, with 30 parts of alcohol or brandy, or chloroform (3 to 6 drops on sugar or in water) sometimes useful. 6. Rectal feeding, gastric lavage, laudanum stupes on epigastrium, ether spray, blistering of cervical spine, and ice-bags exert partly psychical effect. 7. Mental therapeutics, in purely neurotic type of vomiting. 8. Massage, electricity, blisters, etc., may help. *Hall.* 119

Vomiting, Postanesthetic. PROPHYLAXIS. Chloretone, 15 grains (1 Gm.) in capsule one and a half hours before operation, advised. *Bickle.* 484

Whitlow. TREATMENT. Following measures recommended in thecal whitlow: Make preliminary puncture incision to evacuate pus, apply Martin bandage above elbow or knee, and dip affected part in hot Wright's solution. Depths of wound may with advantage be irrigated with same solution at outset, through cannula. When pain alleviated—in a few minutes—remove bandage, insert sufficient rubber drainage, apply gauze saturated with Wright's solution, equalize circulation by compression pad of non-absorbent cotton, and complete dressing with roller bandage and elevation of part. Patient should at home keep dressing moist and warm with the solution (2½ teaspoonfuls of salt and 1 large teaspoonful of sodium citrate in glass of hot water) and apply rubber bandage for thirty minutes every three hours. Inject small dose of polyvalent stock pyogenic bacterins or, where septicemia present, large dose of antistaphylococcic serum. Inject weak iodine solution in lesion occasionally. Later, strive to restore function of parts by massage, passive motion, and if necessary tendon or fascia transplantation. *Skillern.* 420

Whooping-cough. DIAGNOSIS. Edema of the eyelids, especially the lower lids, sometimes appears before the cough and may be of assistance in the diagnosis. *Thursfield.* 97

TREATMENT. Ethyl carbamate found valuable to prevent nervous phenomena occurring when disease has run its course. Dose, ½ to 2 Gm. (7½ to 30 grains) in children under 2 years of age. *Bertling.* 490

Wounds. TREATMENT. Nuclein solution found useful to ward off infection in cases of crushed and lacerated hands, burns, varicose ulcers, minor cuts, etc. *Achard and Redfield.* 105

Sodium perborate found useful as a dressing in infected wounds and acute or chronic ulcers. *Herzfeld.* 167

Solution of aluminum acetate recommended for dressing of infected wounds. Made with aluminum sulphate and acetic acid, of each, 300 Gm.; calcium carbonate, 130 Gm.; distilled water, 1000 c.c. For use, dilute with distilled water, 1 to 7 or 10. *Stansbury.* 227

ANNOUNCEMENTS.

Vaccines in the Treatment of Typhoid Fever.—About six years ago the writer began to use vaccines in the treatment of typhoid fever. Since that time he has thus treated more than one hundred cases and has obtained numerous articles upon the same subject written by physicians in various parts of the world. It seems possible, however, that some may have escaped his notice. He also realizes that many of the profession may have treated some cases without reporting them. A paper upon the subject is now in the course of preparation. In this it is earnestly desired to incorporate reports from a large number of cases, good, bad, and otherwise. He accordingly makes the following request to the readers of this journal:—

Will any one who has used vaccines in the treatment of typhoid fever, whether but one case or more, kindly communicate to him that fact accompanied by name and address of the reporter? If the results have already been reported, a note of the journal in which they appeared will be sufficient. If they have not been reported, a short blank form will be sent to the physician to be filled out. Due credit will be given in the article to each person making a report. If any physician happens to know of other confrères who have any such cases, it will be appreciated if he sends their names, as they may not happen to read this note. It is hoped that by this means a sufficient number of cases may be collected to somewhat definitely settle the now mooted question whether vaccines are or are not of benefit in typhoid therapy.

Reports of cases will be accepted at any time in the future, but preferably by November or December of the present year.

Kindly send all communications to

W. H. Watters, M.D.,
Director of the Department of Pathology and Bacteriology,
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Boston, Mass.

American Therapeutic Society Prizes.—On recommendation of the Council of the American Therapeutic Society, at the annual meeting of the Society held in Montreal, Canada, June 1st, 1912, it was voted that prizes of two hundred and fifty ($250.00), one hundred and fifty ($150.00) and one hundred dollars ($100.00) be awarded to the best reports on subjects relating to Therapeutics, on the following conditions:

1.—The competition is to be limited to qualified physicians in the United States and Canada.

2.—The subject of the competition is to be limited to a substance or preparation which is official in the United States Pharmacopœia.

3.—The research may be either wholly laboratory or clinical, or laboratory and clinical combined, and must be conducted in a public institution.

4.—The reports must be (a) designated by a distinctive word or motto, and (b) must be accompanied by a sealed envelope marked with the said word or motto, and containing the name and address of the competitor and of the laboratories or hospitals in which the research was conducted. (c) The report and protocol must be typewritten. (d) These must be in the hands of the Chairman of the Committee before April 1, 1913.

5.—The reports and protocols are to be judged by a Committee consisting of the three Vice-Presidents of the Society, who shall decide which are the best reports as showing valuable therapeutic research, and shall return their decision, together with all the papers submitted to them, to the Chairman of the Council of the Society before May 1, 1913.

6.—The Chairman of the Council shall then return the unsuccessful reports to their authors, and shall notify the successful author or authors.

7.—The successful report or reports shall be read by the author, or a designated member of the Society, on the first day of the meeting of the Society, immediately after the President's address.

8.—All matters connected with the competition shall be considered as absolutely confidential by the Chairman of the Council and the Judges, except as to the successful competitors.

9.—The Vice-Presidents as judges may fail to award any prize if the report or reports entered in the contest are not found to be of a sufficiently high standard.

10.—In case any Vice-President shall fail to act, the President of the Society shall designate a substitute.

REYNOLD WEBB WILCOX,
THOMAS L. SATTERTHWAITE,
SPENCER L. DAWES,
} *Committee.*

Book Reviews

RETINOSCOPY (or Shadow Test) in the Determination of Refraction at One Meter Distance, with the Plane Mirror. By James Thorington, A.M., M.D., Author of "Refraction and How to Refract," "The Ophthalmoscope and How to Use It"; Professor of Diseases of the Eye in the Philadelphia Polyclinic and College for Graduates in Medicine; Ophthalmic Surgeon to the Presbyterian Hospital; Ophthalmologist to the Elwyn and Vineland Training Schools for Feeble-minded Children. Sixth Edition, Revised and Enlarged. Pp. xvi + 71, with 61 Illustrations, 10 Colored. Philadelphia: P. Blakiston's Son & Co., 1911. Cloth, $1.00, net.

The demand for a sixth edition of this little work affords proof not only of the worth of the book itself, but of the increasing attention being paid to retinoscopy (or skiascopy) as a means of ascertaining the refractive condition of the eye. In addition to the usual revision of the text, seven new illustrations, several of them depicting new forms of apparatus, have been introduced in this edition. As before, the work is very concise and compact; the essentials are given with such clearness and precision as to allow of no doubt in the reader's mind and afford an excellent preliminary survey of the method for the beginner. The advantages of retinoscopy in refraction work are held by the author to be as follows: (1) the character of the refraction is quickly diagnosed; (2) the exact refraction is obtained without questioning the patient, whence the method is of inestimable value in cases of nystagmus, young children, amblyopia, aphakia, illiterates, and the feeble-minded; (3) little time is required to make the test; (4) no expensive apparatus is necessarily required. The importance of having an exact objective method of refraction at command being realized, it is a pleasure to possess a work such as this one, which, in its 6 chapters and 71 pages, sets forth the technique of retinoscopy so simply and completely.

INEBRIETY: A Clinical Treatise on the Etiology, Symptomatology, Neurosis, Psychosis, Treatment, and the Medicolegal Relations. By T. D. Crothers, M.D., Supt. Walnut Lodge Hospital, Hartford, Conn.; Editor of the *Journal of Inebriety;* Author of "Morphinism and Narcomania," "Drug Habits and Their Treatment," etc.; Recording Secretary of the American Medical Society for the Study of Alcohol and Other Narcotics; Member of the American Medical Association, The British Medical Association, Honorary Member of the British Society for the Study of Inebriety, etc. Octavo of 365 Pages. Cincinnati: Harvey Publishing Co., 1911. Cloth, $3.00.

The author of this book is well known as an enthusiastic investigator of the subject of alcoholism. After being assistant physician of the New York State Inebriate Asylum from 1875 to 1878, he became superintendent of a similar hospital in Hartford, Conn., and has continued work in this field ever since. His contention has been from the beginning that alcoholic inebriety is a definite disease the manifestations of which are controlled by fixed laws. The alcohol problem becoming thus essentially a medical and hygienic one, Dr. Crothers in his book has endeavored to group and study systematically the various phenomena of inebriety, in order to point out how it may be prevented and cured by the use of definite physical and psychical measures.

The following enumeration of the chapter-headings in the book will serve well to illustrate in how thorough a manner the author has dealt with the subject: "General Symptomatology and Development;" "Periodic Inebriety and its Symptomatology;" "Continuous Drinkers;" "Inebriety in the Form of Moral Insanity;" "General Causes and Favoring Conditions;" "Special Causes of Inebriety;" "Prognosis of Inebriety;" "Delirium Tremens;" "General Principles of Treatment;" "Home and Office Treatment of Inebriates;" "Institutional Treatment of Inebriates;" "Mental Therapeutics and Suggestion in the Treatment of Inebriety."

Few subjects are of greater importance to the practitioner than that of alcoholism. It is a pleasure to have before us the views of so experienced a specialist in this line as Dr. Crothers. The book, while couched in scientific language, is not too technical for the layman to read, and should therefore not only prove of value to the physician, but also be illuminating to the clergyman, lawyer, and educator in general.

The General Field

Conducted by A. G. CRANDALL

A Year to be Remembered

That hope which is said to live eternal in the human breast is about the only solace now remaining to a large number of politicians, suffragettes, syndicate promoters, and man-milliners for the year 1912.

There was nothing at the outset to indicate that the present calendar year was going to be exceptionally different from any other period. But not more than one or two days of January had been pulled off the calendar pad until it was plain to see that a new kind of a year was on duty. New low-temperature records sprung up on every hand, rivers froze solid, people called the weather department names, and seven governors started for Oyster Bay. There has been something going on ever since.

1601, unfortunate in one respect, but lucky in others, went down with the Titanic and were spared a great deal. Railroad disasters have been frequent and the aviation industry is very quiet.

Floods have devastated the British Isles, but the militant suffragette goes on smashing windows regardless of the condition of the sidewalks; certain German syndicates are very much perturbed because they must pay toll fees if they use the Panama Canal; the Congressional Record has been enriched by the confessions of those interested in saving the country from the ruin sure to come to it if other politicians gain control.

Happy is the politician who during 1912 has no history.

The year 1912 promises to be remembered for some time to come.

Always Something Wrong

A Baltimore woman who secured a decree of divorce with $28,000 per year alimony has found that there is no such thing as perfect happiness in this world. Shortly after having married again and preparing to live happily ever after with the new husband and alimony both, there comes a petition from the former husband, who is unreasonable enough to wish to avoid contributing $28,000 to the general scheme of happiness aforesaid.

A very high percentage of divorces would never be so much as asked for if the alimony feature could be eliminated.

Great Opportunities in New York

People who have patronized expensive restaurants in New York will not be surprised to hear that many waiters are becoming real-estate owners; indeed, many romantic tales are passing out from Manhattan Island describing, with reference to the waiters, the Eldorado.

Other industries are doing quite well in New York. Operating a public automobile after nightfall is said to have proven very profitable in many instances.

Rents, foods, clothing, etc., all command a very high price in Manhattan, but the administration of justice seems to be the most expensive feature of all.

New York is but a type, however. Other cities soon acquire all there is to be learned from the metropolis and in turn hand back a few suggestions now and then which even that blasé city had not yet thought of.

All of which suggests anew that old, old problem, "What is to be done with the cities."

Even Quackery Better

A prominent artist was annoyed by a condition of the skin which did not respond promptly to treatment, and, although assured by various physicians that the affection had no constitutional significance, he was not satisfied, but, according to report, consulted a Chinese physician, dying soon afterward, it is alleged, as a result of such treatment.

The benevolent American quack would have been a much better proposition. It is not at all likely that had this gentleman consulted a typical advertising specialist that there would have been administered any remedies calculated to produce serious physical effects. The only untoward circumstance following such experience would be depression of the pocketbook, from which in the course of time the patient would have recovered.

Of course, it might be assumed that any rational person of reasonable education would be better satisfied to accept the words of counsel of a reputable physician of high standing who had devoted many years to the study of his profession; but there are numerous exceptions to what might be expected, and those people who are not content to be treated by the high-grade medical man of good standing really deserve better than was secured by this unfortunate artist. Therefore, the medical quack seems to have his natural place in the scheme of things after all.

A Haven of Relief

During this restless age, when nearly everyone is anxious to go somewhere else at an early date, there are a great variety of resorts with different features to make them attractive. Bethlehem, N. H., however, has acquired the reputation for a specialty which is individual to that town, and which makes it loom up in the foreground to many a poor sufferer as Paradise itself.

The hay feverite can soon stop sneezing when he reaches Bethlehem. He can gradually recover his dignity and equilibrium and begin to take notice again.

The 39th annual convention of hay feverites took place at Bethlehem, and, while the dignity of the proceedings is said to have been somewhat marred by considerable sneezing, on the whole the occasion passed off creditably.

During certain periods of the year Bethlehem is like all the other small towns which are to be found in considerable profusion on the map, but when the hay-fever season comes on Bethlehem stands out glorified and resplendent in the vision of the victim of hay fever.

Hygiene and Elegance Combined

A new laundry plant is to be established in Philadelphia for the purpose of washing soiled paper money. It is said that old money which has been washed according to this method looks like new.

Certain educational institutions, eager enough for endowment contributions, have nevertheless refused to accept what they call "dirty money." For an en-

tirely different reason, a large number of people might feel justified in refusing to accept much of the paper money which circulates here after it has reached a condition which must necessarily make it more or less unwholesome from the standpoint of health.

The excuse given for considerable governmental hesitation in redeeming this filthy paper currency is economy. It is unfortunate that that same economy could not be carried into some other channels where it seems to be unknown at present. The new laundry process is supposed to accomplish somewhat the same purpose as reissuing currency at a much less expense.

The Medical Miracle

The popular impression of a miracle is that of an occasion where natural laws are put aside and supernatural forces supervene.

The evolution of the germ theory largely dismissed the miraculous from the field of medicine; in fact, that which seems miraculous in medicine is now largely confined to the department of surgery; and yet the microscope permits us to enter the borderland of miracle when we consider the isolation of bacteria and especially the observation of the nerve-cell with reference to that now tangible substance which produces nerve energy.

Every doctor is competent to perform what in former years would be regarded as a miracle and he does it in the most matter of fact manner.

When we consider what has been accomplished in the past fifty years in medicine and surgery, it naturally leads us to the conclusion that the time is not far distant when the term medical miracle will be unknown to even the most flamboyant novel writer.

Medical Supervision of School Children

Very little systematic work in supervision is being done with school children outside of the large cities. But it would not appear to be a serious undertaking to have every child of school age examined with reference to the condition of the nose and throat, hearing, condition of the teeth, and general physical appearance.

There are various fads carried on in the public schools compared with which but a fraction of the amount of organization and labor would be necessary to make this form of supervision a success.

There are many well-meaning parents who are so careless and so much taken up with their daily routine that they do not give any attention to a child's teeth until the child has toothache; neither do they pay special attention to mouth breathing. These two factors alone have much to do with the physical and mental future of the child.

A brief tabulation of the approximate number of children of school age throughout the United States and the most casual consideration of what it means to have defects in these children detected before they have become serious point out the way to the greatest altruistic enterprise which it would be possible to set in motion.

Fashion vs Health

A certain prophet who lived many centuries ago, named Jeremiah, found a great deal of fault with nearly everything, but there was no special occasion for him at that time to make any com-

ments on woman's apparel. He was therefore spared a great strain.

Just why beauty and hygiene should be so antagonistic to each other is hard to say, but as a rule the thing which is fashionable is the least desirable from the health standpoint. When it comes to the question of health on the one side and appearance on the other, a large number of people of both sexes unhesitatingly give health the go-by.

The price of cotton a few years ago suddenly went very high and has remained at an abnormally high figure ever since. It takes a fairly good grade of cotton to make hosiery, so the manufacturer with great cunning and shrewdness devised the present transparent style of men's and women's hose. Only a very small amount of raw material is necessary to make a pair of stockings that will bring just as much money in the market—perhaps more—than the former style containing two or three times as much raw material.

Except in the extreme warm weather, there is no doubt but that this extremely thin hosiery is prejudicial to health, and common sense teaches that fact plainly enough, so that most anyone must recognize it. Nevertheless, at all seasons of the year there is a good deal of very light hosiery worn, showing that appearance wins out as against that which common sense will dictate.

All the woolen mills are turning out much lighter weight cloths for the tailoring trade. People are reluctant to pay the increased price; so the manufacturer cunningly devises the lighter weaves. It can thus be seen that organized business is, after all, responsible for the prevailing methods of dress, which cannot fail to be detrimental to the public health.

A New Danger

A lady physician has contributed a new idea about noxious germs. In a recent popular magazine she informs her readers that germs collect in large quantities on the weeds which grow around a dwelling house, and that as soon as the weeds decay from any cause the winds promptly pass these germs into the lungs of the inmates of the house, with very serious result.

The remedy is to pour scalding hot lye on the weed.

Just why germs should collect upon weeds rather than upon flowers or other wholesome plants does not appear in this philosophy. It is not likely that this authority would recommend the destruction of all vegetation which might grow around the dwelling house.

The foregoing furnishes a sad illustration of what is being dispensed to the lay public as scientific knowledge.

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Original Articles

FACTORS WHICH ALTER BLOOD-PRESSURE IN PULMONARY TUBERCULOSIS.*

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THE blood-pressure of an individual depends upon the power of the heart, the resistance met by the blood-stream in the peripheral vessels, the condition of the walls of the vessels, and the total quantity of blood, together with its distribution in the various vessels.

These various factors are in a state of equilibrium in healthy subjects and produce a certain resultant, the normal blood-pressure. Blood-pressure varies considerably in individuals in health, being influenced by many factors, such as age, habits of life, time of day, taking of food, climate, and meteorological conditions.

There is considerable personal error in determining blood-pressure, so that it is somewhat difficult to compare the individual readings made by different observers. This error should, indeed, be the same in all readings taken by the same individual; but since the error in the case of different observers is unequal, the results of different observers can only be compared in a relative way.

The following observations will illustrate this point: Statistics on blood-pressure in tuberculous patients gathered from different observers show wide differences in the results as measured in millimeters of mercury, but agree in one respect, viz., that the blood-pressure is lowered in this disease and becomes permanently lower as the disease advances. Strandgaard[1] took observations on 336 men and 286 women suffering from pulmonary tuberculosis with the following results, according to stages:—

* Read at the Thirteenth Annual Meeting of the American Therapeutic Society, held in Montreal, Canada, May 31 and June 1, 1912.

I Stage	125 mm. Hg.
II Stage	121 mm. Hg.
III Stage	118 mm. Hg.

Burckhardt,[2] making his examination at Basel, found

I Stage	107.6 mm. Hg.
II Stage	104.6 mm. Hg.
III Stage	100.3 mm. Hg.

Igersheim[3] found

I Stage	100.4 mm. Hg.
II Stage	97.3 mm. Hg.
III Stage	95.4 mm. Hg.

Pottenger[4] examined twenty normal persons and compared the findings with those in 135 tuberculous patients divided according to stages of the disease. The results were as follows, for both the systolic and diastolic pressures:—

	Systolic.	Diastolic.
20 Normal individuals	120	108 mm. Hg.
11 Patients in I stage	106	78 mm. Hg.
21 Patients in II stage	108	81 mm. Hg.
103 Patients in III stage	103	75 mm. Hg.

Thus we have average blood-pressures ranging as follows:—

I Stage	from 100.4 to 125 mm. Hg.
II Stage	from 97.3 to 121 mm. Hg.
III Stage	from 95.4 to 118 mm. Hg.

While there is a wide variation in the readings for the same stage of the disease as recorded by the different observers just quoted, yet there is general agreement on two points: First, that there is a lowered pressure in pulmonary tuberculosis, and, second, that it is lower in advanced tuberculosis than in the early stage.

In tuberculosis there are many forces associated with the disease which affect the blood-pressure. An analysis of these forces may help in better understanding the clinical manifestations of the disease.

It has been known for a long time that tuberculosis is accompanied by low blood-pressure, the reason generally assigned being the action of the toxins in producing vasodilator effects. Careful study and observation show, however, that this is not the only factor operating to produce low pressure, and, indeed, that it is only one of a number of factors which are influencing the blood-pressure in tuberculosis.

In the paper quoted above, I drew the following conclusions regarding blood-pressure in pulmonary tuberculosis:—

1. A relative low blood-pressure is found in tuberculosis, especially in advanced tuberculosis.

2. The factors which favor low pressure are the effect of the toxins upon the vasodilators, the weakness of the heart muscle, and general wasting.

3. The factors which have a tendency to maintain pressure are hypertrophy of the heart muscle and thickening of the systemic arteries.

4. Thickening of the systemic arteries occurs perhaps as a result of the action of toxins on the vessel wall, and, therefore, is found especially in patients who have had tuberculosis for some time.

Further experience confirms my former observations and enables me to add one more factor which I believe is of great importance in the production of low pressure. I refer to the altered function of the diaphragm and the accompanying splanchnic congestion and relative arterial anemia.[5]

That displacement and lessened motion of the diaphragm produce the above conditions has been pointed out by several observers during the past few years, notably by Keith, Wenckebach, and Hess. That the motion of the diaphragm is altered in tuberculosis was shown by Williams by means of the fluoroscope in 1897. The same thing was observed by Litten in observing in this disease the alteration of the sign which bears his name. Krönig also recognizes this fact in another way by showing that the motion of the lower border of the lung is diminished when pulmonary tuberculosis is present, even though the lesion is small. Further evidence is afforded by the fact which I have emphasized in a recent paper,[6] viz., that the entire side of the chest lags even in the presence of slight apical involvement.

That this altered function of the diaphragm produces low arterial tension is self-evident, for through it the blood is allowed to accumulate in the veins, particularly the splanchnic, owing to the fact that the suction action upon the veins which is produced normally by the contraction of the diaphragm is lessened. It is well known that the splanchnics are capable of holding nearly all the blood of the body. If the splanchnics contain more than their normal amount of blood it is further self-evident that the arterial system must suffer a deficiency, with resulting low tension. I formerly pointed out that this condition probably affords additional explanation of the oft-observed fact that the tuberculous patient is pale and looks anemic when blood-counts show little, if any, anemia. The patient is caused to appear pale by the deficiency of blood in the arteries.

It might be of interest in this connection to discuss the causes of this altered function of the diaphragm. I have given this subject considerable attention in other papers and will, therefore, simply mention my own theory here, viz., that it is a part of the general scheme of protection by lessened motion which has so long been recognized in the presence of abdominal lesions, and that its cause is the same as that which produces the spasm of the muscles of the neck and chest under the same conditions—a reflex stimulation—the impulse passing from the inflamed lung to the cord, there exciting the adjacent cells of the segment and sending out stimuli to the diaphragm through the motor fibers which take their origin from the contiguous cells, causing it to assume a condition of tonic contraction or spasm.

Thus, we see that two of the factors which cause low tension in tuberculosis, the toxins and the altered function of the diaphragm, are present very early in the disease. To be sure, they become more active as the disease

progresses, for as it advances the toxins increase, and as destruction of tissue goes on the action of the diaphragm is interfered with more seriously and its position in the body becomes greatly altered. Added to these factors, we also have the loss of power on the part of the heart muscle and the weakness due to general wasting. I have seen under these conditions falls in blood-pressure of from 30 to even 50 mm. Hg.

On the other hand, there are factors which are attempting to maintain pressure. Early in the disease there is an increased number of heart beats, and then an hypertrophy of the right ventricle occurs. As the disease progresses and the pressure in the lungs becomes greater, the muscular strength of the right ventricle increases,—a condition which is maintained as long as the muscle is able to overcome the added pressure.

After the disease has existed for a period of time, and the toxins have continued to circulate in the blood, the arterial walls become irritated and thickened, just as they do under the influence of other toxins. In a study of 162 patients,[4] summarized in the following table, the condition of the radials was noted—whether palpable or non-palpable; the patients being divided into three classes: Those ill less than one year; more than one, but less than two, years; and more than two years:—

	Duration of the disease.		
Condition of radials.	Less than 1 year.	1 to 2 years.	More than 2 years.
Palpable	14	20	60
Non-palpable	14	21	33

There were 28 in Class I, with 14 palpable and 14 non-palpable; 41 in Class II, with 20 palpable and 21 non-palpable; 93 in Class III, with 60 palpable and 33 non-palpable. Thus, the interesting fact is brought out that two-thirds of those who had had clinical symptoms for more than two years had thickened arteries.

I have frequently found this thickened condition of the arteries in young people. One case, which I previously reported, that of a child of 11 years with clinical symptoms of two years' duration, showed markedly thickened arteries, and I have frequently found it in patients of 18 and 20 years.

To summarize:—

1. Low blood-pressure in tuberculosis is favored by the action of the toxins, the disturbed action of the diaphragm, and particularly, as the disease becomes advanced, by the weakness of the heart muscle and the general wasting.

2. High blood-pressure is favored by the increase in the frequency of the heart beats, the hypertrophy of the heart, and the thickening of the arterial walls.

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HIGH BLOOD-PRESSURE ARISING FROM NERVOUS STRAIN IN DISEASES OF THE NERVOUS SYSTEM.*

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The various conditions of blood-pressure in diseases other than nervous have been fully discussed in this symposium. In looking into the subject from my special standpoint, I would emphasize the fact that many of the conditions already referred to are present and complicate the special disorders of the nervous system which I shall discuss; indeed, may be factors in their etiology. They may exist alone, independently, but it is more common to find them coexisting. I shall refer in this paper especially to disorders of the nervous system due to arterial disease, either endarteritis of the atheromatous type or that consequent on syphilis, to cerebral compression as caused by new growths, increase of cerebrospinal fluid, etc., or, again, to vascular changes the result of the direct poisons, as in uremia, diabetes, alcoholism, etc.

In the first group, endarteritis of a degenerative character, we find a rather general distribution of arterial disease. Hence not only is the nervous system involved, with resulting symptoms of cerebral and spinal nature, but a condition of interstitial nephritis and cardiac hypertrophy is also present. This is the usual picture in those past 40 years of age who are the subjects of apoplectic or epileptic seizures. In the young cases, with probably acute cardiac and renal involvement, we have symptoms peculiar to the disorders of the special organs, but little or no tendency to cerebral hemorrhage or apoplexy. The blood-pressure in these cases may be temporarily high, but is not continuously so, and is more easily relieved or controlled.

In the former cases, however, with a general endarteritis, including involvement of the cerebral vessels, we have a constantly high blood-pressure, subject also to marked increase; which is the danger point, indicating the probability of a seizure, apoplectic or epileptic. In an interesting case corresponding to this type the whole course of the attack could be marked out by the rise of blood-pressure while an examination was being made with the sphygmomanometer. The pressure continued to rise until the patient passed into an epileptic seizure, the cessation of which, on the other hand, was marked by a rapid fall in the pressure. In a not dissimilar case reported by Pal, contraction of the arteries in the eye and stasis with dilatation of the veins were observed. In these two cases we have explained, very probably, the actual state of the circulation and the cause of the epileptic seizure. This condition marks out positively the difference distinguishing epileptic seizures of this nature from those which, for want of a better name, we still call idio-

* Read at the Thirteenth Annual Meeting of the American Therapeutic Society held in Montreal, Canada, May 31 and June 1, 1912.

pathic or essential epilepsy, and, again, from those due to a focal lesion, such as a tumor, meningeal disease, or trauma. Convulsions due to any cause, if violent or constantly repeated, will or can, from the exhaustion of the cortical cells, lead to mental disease; but the general mental complex is very different from the epilepsy beginning in childhood without a definite etiological factor, and explainable only on the basis of some cell degeneration of an hereditary nature.

In eclampsia during pregnancy a great and often sudden rise of blood-pressure is observed preceding the seizure. This evidently is not due to arterial disease, but to some toxic agent with which we are as yet unacquainted. The very suddenness of these seizures is their especial danger, and it is this type also which is the least easily controlled. High blood-pressure when present during pregnancy should be considered a danger signal.

In syphilitic endarteritis the blood-pressure is often very low or normal; if it be high, this is due, not to the arterial disease, but to complications such as nephritis, cardiac disease, or diabetes, etc. This probably explains the clinical condition, which is the result not, as a rule, of cerebral hemorrhage, but of cerebral thrombosis, as we know it is the cerebral vessels that are especially vulnerable to syphilis. The explanation of cerebral hemorrhage, or apoplexy, or epilepsy in these cases is a cerebral anemia, gradual in onset and often, though it is not permanent, depending, not on spasm in the arterial coats, but on a gradual, more or less complete occlusion of the caliber of the vessels from actual thickening of their coats, both intima and adventitia, or, again, as is often the case, on actual infiltration of new growth, syphilitic tissue or gumma, into the vascular walls, likewise causing occlusion of the lumen. As previously stated, we may in syphilitic cases have the other complications which modify this picture—explainable, as in non-specific cases, on the basis of either exogenous or endogenous causes. As might be expected, specific cases are more subject than others to these outside influences.

One is inclined, in studying his patients, after finding one factor suggestive of a given disease, to try to make any symptom fit into this special diagnostic feature, forgetting that probably other factors are also present which, if not the fundamental, basic cause of the condition, are exciting causes, removal of which may lead to a much more successful treatment of the fundamental disorder. Thus, we may, for example, have a hysterical paralysis; but this does not preclude the possibility of there being present at the same time an organic paralysis of either cerebral or spinal origin.

I have dwelt thus long on high pressure in vascular diseases of the nervous system because it is of greater importance in these conditions and more frequently diagnostic in character than in other nervous affections.

In cerebral growths there occurs compression of the brain, which may also manifest itself by high blood-pressure. Here, again, we have variations dependent on exciting conditions, such as cephalalgia, intercurrent disease of the kidneys or heart, drugs, etc. The convulsions present may be due to anemia from pressure, especially so in the case of general convulsions, and not improbably even in focal seizures. In the latter, however, it is possible

to conceive of seizures of the Jacksonian type being occasioned purely by irritation, such as can be mechanically induced experimentally by passing a faradic current through a given area. Abscesses or tumors often lead to low blood-pressure, except during certain seizures indicating local or general cerebral irritation.

There may be high blood-pressure in cerebral tumors, in hydrocephalus, or in compression following trauma. This high blood-pressure may be observed to fall as soon as the skull is opened, or more certainly on opening the dura, with the escape of the cerebrospinal fluid. This is not always true, however, in decompression operations following trauma; many such cases continue to show high blood-pressure and fail to regain consciousness.

Taking the blood-pressure as a matter of routine during cerebral operations is valuable, as a rapid fall indicates the need of stimulation or cessation of further extension of the operation at the time.

A very singular case of general high blood-pressure, involving both the splanchnic system and the cerebral circulation, was observed in a patient of 65 with interstitial nephritis of a mild character and arteriosclerosis. The initial symptoms were those of intense pain in the back and lower extremities, with paraplegia; the former were relieved by morphine. Within a few hours a distinct apoplectic seizure, with coma and right hemiplegia and aphasia, took place. The paraplegia and pain ceased, but the hemiplegia and aphasia remained.

In closing this brief paper, I would emphasize the value of observing the blood-pressure in all cases of vascular disease. Its sudden or steady rise will indicate the line of treatment which may avert a catastrophe, or, at least, it will inform us of the danger to our patient.

THE TREATMENT OF PULMONARY TUBERCULOSIS BY COMPRESSION OF THE LUNG.

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In the treatment of pulmonary tuberculosis by compression of the lung, success or failure in any given case depends somewhat upon the degree of comprehension of the fundamental principles upon which the method is based, and somewhat also upon a clear understanding of the difficulties and dangers associated with the attempt and the best way to manage them.

Forlanini, who first proposed the method in 1882, emphasizes the importance of applying and persistently maintaining sufficient pressure to prevent any expansion of the lung. Pressure is the one effect produced by the nitrogen, and upon the proper application of this pressure success or failure depends. How much pressure can be used and how it should be maintained has to be decided in each case. The working principles adopted by the operator, as well

as his temperament, will largely influence the results, likewise the peculiarities of the case. Murphy introduced as much nitrogen as possible for a few times only, and obtained good results in 3 cases out of 5. His assistant, Lemke, treated 53 cases in much the same way, with good results. Brauer puts in large quantities of nitrogen and keeps the lung compressed for a year or more by fillings made every week, ten days, two weeks, or even at longer intervals, according to the rate of absorption. Forlanini urges the importance of giving small quantities of nitrogen frequently, in order constantly to supply the daily loss by absorption and maintain a persistent, even pressure.

A lung thus treated heals because of the effects of pressure. As the blood-vessels are compressed, the lung becomes anemic and dry, and as the entrance of air is inhibited the conditions do not favor the growth of tubercle bacilli. The pressure upon the lung induces a lymphatic stasis which is very favorable to an exuberant development of connective tissue, and this converts the tuberculous lesions into scars. In order to suppress the growth of the tubercle bacilli and to favor these connective-tissue infiltrations, the lung must be kept from expanding and tearing the newly made scar tissues, and the entrance of blood and air not permitted. One thousand c.c. of nitrogen exerts a certain pressure today which is partially lost tomorrow owing to absorption; still more is lost the next day, and so on. The full amount of pressure is never the same, and there is more or less tendency for the lung to expand with the fall in pressure. Therefore, in order to keep the pressure up to a certain standard, Forlanini advises introducing enough nitrogen from day to day to replace that lost by absorption. At first the shrinkage of the lung increases the loss of pressure, so that the gas must be more frequently replaced than subsequently when the lung no longer loses bulk. Having established a standard of pressure that is sufficient to hold the lung well compressed and is borne without inconvenience, the degree of pressure found at the time of making the fillings will determine the frequency of the renewals. If very little pressure has been lost, the interval may be lengthened; if too much has been lost, it should be shortened.

The disadvantages of insufficient or excessive pressure necessitate a careful estimate of the amount of pressure necessary and that which the patient can stand without being unfavorably influenced. Insufficient pressure accomplishes but little, and after months of effort the results may be disappointing. It is even possible that an insufficient pressure may cause localized hyperemias and thus favor hemorrhage.

On the other hand, excessive pressure reacts upon the digestive functions, especially when the right lung is compressed and the portal circulation interfered with. The liver does not act well, there is stasis of the gastrointestinal circulation, the action of the heart is weakened, the solar plexus may not adapt itself to the altered conditions, there may be pronounced neurasthenia, etc. When the pleural cavity is overstretched it bulges over onto the other side, causing pain and crippling the action of the other lung; it may apparently also stir latent foci into activity. Loss of weight, appetite, and strength; headache, insomnia, indigestion, and many other disagreeable results may follow

excessive pressure. At first, when the lung is losing in bulk and before the undesirable effects of excessive pressure have become manifest, all may go well, but it is always possible that a new standard of pressure may have to be adopted. When the pleural cavity is free, the effects of pressure are much more marked, and a much lower pressure suffices than when there are adhesions which have to be broken up and which so circumscribe the nitrogen that its effects are limited to a restricted portion of the lung. For a case with no adhesions one or two centimeters of water-pressure may be amply sufficient, whereas a much higher pressure is necessary to break up adhesions.

The real skill and ability to use the method successfully is shown in the avoidance of dangers and the overcoming of adhesions. With no adhesions there is no danger and the lung is compressed with the greatest ease. In proportion to the extent of pleural adhesions the difficulties and dangers increase, until finally nothing can be done.

When there are no adhesions there is no difficulty in puncturing the costal without injuring the visceral pleura or the lung. The pressure of the atmosphere acting upon the open end of the manometer is transmitted through the water and the nitrogen that fill the tube connecting the needle with the manometer, and so on to the costal pleura. As the needle pierces the costal pleura the nitrogen is pushed forward through the needle by the pressure of the atmosphere because the intrapulmonary pressure is lowered by inspiration. As the nitrogen overcomes the capillary attraction holding the pleural surfaces intimately apposed, the visceral pleura and the lung fall back out of the way.

The mechanism of respiration depends upon the transmission of atmospheric pressure throughout the lung and the absence of all atmospheric pressure between the lung and the ribs. As soon as the outside pressure is transmitted to the pleural surfaces the mechanism of respiration is destroyed. The atmospheric force within the lung is counterbalanced by that without the lung and the lung cannot expand. The balance of forces induces an equilibrium that destroys the effect of expansion of the thorax. When there are adhesions the effect of this transmission of outside force is nullified. If the adhesions are in the shape of bands the surface of the lung will be held out so that it cannot collapse, although a good pleural cavity may be produced. If the adhesions are meshy the nitrogen enters slowly and there is a marked rise in pressure. After 200 or 300 c.c. have been injected there may be 6 or 7 cm. of water-pressure. The nitrogen later gradually disperses through these adhesions, and when the time comes to make another filling it is found that there are no excursions of the manometer. The needle is not stopped, but there is no pleural cavity according to the manometer. Many cases are reported of inability to make a second filling after the easy and successful production of a pleural cavity.

After the nitrogen disperses, the pleural surfaces become so intimately apposed that they are pierced by the needle as one and the danger therefore arises of penetrating into the lung. This danger always exists when the pleural surfaces are too adherent to be separated. Unfortunately the danger is not confined to the first attempt, but is imminent every time one tries to

make a filling, because of the possibility that the cushion of nitrogen may have failed to keep the surfaces apart. Many good authorities assert that the lung may be punctured without danger, provided it is not torn. Many cases are reported of repeated punctures, as evidenced by an irritating cough and the spitting of blood, without any harm whatever. On the other hand, there have been cases of sudden death which occurred without any nitrogen being turned on, and almost before the manometer could be tried. In a flash, the patient was gone, with instantaneous cessation of respiration and circulation. These deaths strongly resemble those occurring during operations on the lungs. Körte[1] says: "In operating upon the lungs I have had several severe and fatal cases of collapse without any appreciable reason, since there was no hemorrhage of any account nor pneumothorax. This has happened at the very start, before anything had been done, and also at the end, when everything had been successfully accomplished. In a case of gangrene of the lung I succeeded in finding the cavity, and all went well until we lifted the man to pass a bandage around him, when the jaw fell and pulse and respiration ceased. I have had 3 such cases of collapse and know of no way to prevent them. They have occurred with and without narcosis and with young, strong men. I can only explain these collapses as due to irritation of the vagus, causing a reflex cessation of respiration."

These deaths may also be explained as due to gas embolism, and Quincke[2] and others have reported cases corroborating this supposition. Quincke describes a case of sudden collapse and death due to the opening of a pulmonary vein. There was slight loss of blood at first, but, as this amounted only to a few cubic centimeters, it could have had no share in the accident. Quincke thought there was negative pressure in the vein, and a slight sucking noise was heard, which may have meant the entrance of air into the vessel. Quincke graphically describes the canalization of the pulmonary veins when they are held out by fibrosis of the lung tissue, and compares this condition to bronchiectasis, with consequent inability of the bronchial tubes to collapse. Lenhartz[3] reports 6 cases in which respiration ceased instantaneously; the patients became pale and the pulse stopped. It was as if they were struck dead at once, as quickly as lightning. Artificial respiration, cardiac massage, etc., availed nothing. In other cases death was delayed. These cases manifested various cerebral conditions, convulsions, blepharospasms, etc.

If in puncturing the lung the needle should happen to enter one of these canalized spaces, what is to prevent the fall in pressure due to inspiration from permitting the nitrogen in the needle and rubber tubing to be forced on into the space, owing to the pressure of the atmosphere exerted at the open end of the manometer? Death can thus be caused before any nitrogen has been turned on, and almost unavoidably, since one is obliged to try the manometer. It would be better, for this reason, to use a dial manometer, which would not

[1] Körte: Diskussion Chirurgen-Kongress, 1907, p. 73.

[2] Quincke: "Zur operativen Behandlung der Lungenabszesse," Berl. klin. Woch., 1888, No. 18.

[3] Lenhartz: Chirurgen-Kongress, 1907, p. 66.

permit the exit of nitrogen from the needle while the manometer was being tried.

Gas embolism has occurred as late as the twentieth filling in cases that had never presented any difficulties, and its danger is so imminent that Spengler[4] thinks no filling should be attempted until an X-ray examination has convinced the operator that the nitrogen cushion is thick enough to keep the lung from being punctured. Without this information, only the readings of the manometer can give guidance for the location of the point of the needle, and these readings are sometimes misleading. It may be that the point of the needle is really in the pleural cavity and that there is no danger, but the manometer does not show any excursions, because adhesions blur the effect of the respiratory efforts.

It has happened that the manometer gave no excursions at first, but that after a few c.c. of nitrogen were introduced these excursions appeared in satisfactory force and a successful filling was made. This is always dangerous and should never be attempted. If the point of the needle is in a bronchus sufficiently large, or in the subpleural space, there may be fairly good excursions. If it is in a pleural band or a small pocket, there is a sharp rise of pressure. The piercing of a vein causes a good deal of pain, and with a stethoscope liquid sounds may be heard.

The smaller the needle used, the more unsatisfactory are the readings of the manometer. There are operators who, in order to obtain good readings of the manometer, use a large-sized aspirating needle every time a filling is made. This is painful and discourages frequent fillings. It is possible that lack of success in some cases has been due to failure to maintain sufficient persistent pressure because of the pain caused when the fillings are made. Von Muralt uses a needle that is large enough to give good readings by the manometer, and yet causes but little more pain than a fine Forlanini needle. To use too fine a needle is very trying. The smallest obstruction, which can neither be detected nor removed by probing, causes the nitrogen to flow with exasperating slowness and obscures the readings of the manometer.

When there are good respiratory excursions and yet the nitrogen does not flow out, and there is at once a sharp rise of pressure, the needle is probably in a very small pocket. It might be possible to separate the pleural surfaces if a Brauer were done and the adhesions could be broken up by a catheter. This would be worth considering if several attempts to produce a pleural cavity by Brauer's method had failed because of adherence of the pleural surfaces. In these difficult cases testing thoroughly by means of the Forlanini method might find a place where a Brauer could be done.

In making the puncture, according to Forlanini, it is well to consider whether, in case the lung were punctured, tearing of it would be less likely if the head of the needle were allowed to move with the movements of the thorax instead of being held firmly fixed. Forlanini has even advised moving the needle about very slightly, but this would seem to be very dangerous, for if a

[4] Spengler: Brauer's "Beiträge z. k. d. Tuberkulose," Band xiv, Heft 4.

blood-vessel were torn air might be sucked in from the lung, or when the nitrogen was turned on it might be forced into the torn vessel.

Forlanini calls attention to the danger of gas embolism occurring through the pleural vessels. It is theoretically possible that a pleural vessel might be torn by the passage of the needle, and that in the presence of a sufficient pressure of nitrogen the latter might be forced into the torn vessel and cause gas embolism. Guyot-Bourg[5] describes the massive formation of new blood-vessels in some chronic cases of pulmonary tuberculosis, when the pulmonary circulation is blocked by infiltrated areas. The branches of the pulmonary artery do not anastomose, and when the obliterative processes characteristic of the disease sufficiently obstruct the passage of blood coming from the right ventricle an effort is made to establish a collateral circulation between the vessels of the pleura and the thoracic walls. Guyot Bourg injected the branches of the pulmonary artery and saw the blood pass through the pulmonary vessels, then through the angiomatous pseudomembrane of the pleura, and come out of the incised intercostal and diaphragmatic veins. The visceral neoplastic vessels originate in the pulmonary system, the parietal in the vessels of the thoracic wall, and later these blend, establishing a collateral circulation between the lung and the thoracic walls. Injection of coloring substance into the pulmonary artery shows the magnitude of the neoplasm; the intricate network consists of tortuous, dilated, expanded venous channels like those of an angioma. An attempt to break up pleural adhesions of this nature might produce several tears in the vessel walls and subsequent absorption of nitrogen. Blood has been seen to well up through the head of the needle and out onto the skin when there was no blood whatever in the puncture wound.

Gas embolism may occur at once, before any nitrogen has been turned on, or be delayed until the end or after the filling has been completed: It may be instantaneously fatal, or death may be delayed for several days. It may occur without warning and give no opportunity for attempts at resuscitation, or the patient may complain of feeling queer or numb, or of loss of vision. In delayed death loss of consciousness and convulsions are marked features. There is sometimes conjugate deviation, with convulsions or rigidity, and excessive trismus. The eyes roll up, the corneal reflex is abolished, and foam may come from the mouth. Marbling and mottling of the skin bear witness to the obstruction in the circulation.

If the cause of these convulsions is the pressure of the gas emboli upon the motor centers, and the collapse phenomena are due to pressure upon the vital centers in the medulla, would it not be better to use strong ammonia and provoke coughing to drive on these emboli rather than to depress cerebral activity with morphine? In the cases of gas embolism reported morphine has been given to quiet the spasms, and one is tempted to inquire how much this secondary depression has had to do with failure to recover.

[5] Guyot-Bourg: Clinica Medica Italiana, 1906.

THE DUCTLESS GLANDS AS A FACTOR IN THE PRODUCTION OF RACIAL DIFFERENCES.

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THE rôle which environment, especially climatic and geological influences, has played in the production and differentiation of races must be admitted by all, but the *modus operandi* is still a question for speculation.

There is no doubt that geographical and geological conditions are potent factors in this connection, and that there is an interplay of forces forming the basis of selection, such as climate, soil, warmth and cold, quantity of sunlight, altitude and latitude, abundance or scarcity of food, degree of civilization, etc., all of which have exerted a decided influence in differentiating one people from another, or in emphasizing their ethnic differences. Yet, profound as these influences are, they are only secondary causes. The mutations which a race undergoes are essentially of a physiological nature. Thus, when the Aryans descended to the enervating lowlands of tropical India, and in that debilitating climate lost the qualities which first gave them supremacy, the change which they underwent was principally a physiological one.

This naturally raises the question of man's adaptability to his environment, and the mechanism by which it is accomplished. To understand this action fully it is necessary to take a glimpse at present biological teachings, which obviously lead us to the closely allied question, the origin of species. Especially is this necessary today, when much confusion has been wrought through the widespread influences of the fashionable theories of Weismann, as a consequence of which the Lamarck-Darwinian doctrine has fallen into undeserved discredit.

It has become a debated point whether evolution comes from within or from without, and this through a misinterpretation of the teachings of Lamarck and Darwin. It appears to me that these two pioneers agree in the essential points advanced. Darwin accepts the Lamarckian principle in its widest sense, stating that variations which are transmitted to the offspring are probably produced by the environment. This principle regards all reactions of the body to environmental factors as variations. Lamarck taught that changes in the environment were the direct cause of variation, and, in the formulation of his second law, lays particular stress on the production of new organs in the animal body by the supervention of a new want (besoin), *i.e.*, through changes in the habits of the animal due to appetence or longing, there occurred a tendency to variation and the formation of new organs.

Darwin believed that within the great process of evolution there are two distinct changes, one the *transformation of species*, that is, the change of one existing form of life into *one* other one, and the other, the *differentiation of species*, that is, the division of one existing form into *two or more* other ones. For the first process, the transformation of species, three factors are necessary:

variation, inheritance, and natural selection. In the second process the new species originate "if they are enabled to seize on many and widely diversified places in the polity of nature"; "if they become fitted for . . . different habits of life or conditions."

From this it will be observed that Darwin is in complete accord with Lamarck, and that the new school, which owes its existence to Weismann and the experimental researches of Roux in morphology and physiology, has taken sides without warrant in producing the "vitalism" of von Hartmann, a theory which denies that the vital phenomena can be described or explained in "merely mechanistic terms." After asserting that the mechanistic explanation of life is untenable, the adherents of this view endeavor to describe the nature of the process in two ways, some sustaining a psychological vitalism (or biological animism) and the others a non-psychological vitalism.

Psychological vitalism has, nevertheless, intensified the Lamarckian doctrine, finding in the phenomena of consciousness, especially in the immediately felt inner nature of simple awareness, desire and aversion, some clue to the sort of causal process which must be assumed to account for the peculiar form and adaptiveness of living things, as well as their functioning.

But this is an objectionable separation. The Darwinian principle accepts both sides, recognizing mechanism on one side, and, on the other, sensation, feeling, memory, and volition. Lamarck, to account for the phenomena of adaptation, invokes use and disuse, effort and habit, and considers their effect as directly adaptive and hereditary, thus explaining the evolution of organs necessary for life in certain surroundings and the regression of those that are useless under the particular environmental conditions existing. Whichever doctrine is accepted, one thing is certain, viz., that the mutations observable in man can only be explained by changes in the germ through the influence of the environment, taken together, not singly, and accomplished by slow variation. To effect this adaptability is necessary, and adaptability is that induction of biology by which organisms fit themselves to their surroundings, and is the deciding factor in the origin of species. It is the necessary consequence of the surviving ability of the species, and the species which does not adapt itself to the environment perishes. The first requirement is that the species must become *fitted* for the different habits of life and conditions.

How do species become so fitted?

The key to the solution of this problem, I think, will be found in the rôle played by the ductless glands, which by virtue of their internal secretions are at the foundation of the phenomena of adaptability and development.

It is almost certain that climatic conditions, such as warmth, moisture, elevation, etc., exert a specific action on the activity of one or other of these glands. Owing to the accelerative functions of these organs, they constitute the most important factor in fitting the individual for different habits of life and conditions and thereby in the production of the different races. We know today, thanks to surgical and experimental methods and the labors of Sajous, that the thyroids, suprarenal capsules, and hypophysis are organs of immense

importance to the organism, and that they play an important part in the regulation and maintenance of life.

Thus we find that absence of the thyroid in children causes arrest of growth and cretinism, and absence of the same organ in the adult, either as a result of surgical intervention or through lesion of the gland, produces the disease known as myxedema. In animals complete removal of the thyroid results in death. While removal of the parathyroid causes tetanic symptoms, there seems to be a functional antagonism between the thyroids and parathyroids.

The pituitary body seems to be in some way connected with the growth of the body, and to perform an important function in the organism. In 1886 P. Marie found that tumors of the hypophysis were associated with certain striking symptoms, such as overgrowth of certain parts of the skeleton, especially the extremities and jaws, and unusual stature or gigantism, the whole constituting a condition which he called "acromegaly."

Certain glands of internal secretion supply the organism with a peculiar substance which, upon gaining access to the blood, neutralizes certain poisons or specific substances which accumulate therein. A fact of no less importance is the correlation existing between them; they interact, and thus profoundly affect metabolism in its various phases.

The environment, by virtue of its action on these glands, would tend either to accelerate or retard their functions. It is probable that in certain localities the conditions are such that the thyroids, adrenals, and hypophysis are excited to greater activity, the metabolism of proteins being thereby increased, as has been demonstrated experimentally by injecting extracts of these organs or interfering with their functions. The hypophysis exerts the most marked effects in this respect, while the adrenals mobilize the carbohydrates and the thyroids increase the destruction of fats.

The influence of other localities would, on the contrary, be inhibitive, the conditions being such as to fail to stimulate the glands referred to or stimulate other glands the functions of which are known to be retardative, *e.g.*, the pancreas and parathyroids. It is an established fact, we may add, that the pancreas retards protein destruction and decreases fat consumption, while the parathyroids restrain the mobilization of carbohydrates.

The influence of these glands on mineral metabolism is equally remarkable. It has been shown that thyroid feeding increases the output of phosphates through the intestines, while hypophysis feeding leads to a decrease of phosphates.

It is also a well-established fact that these glands exert a powerful influence on the nervous system, especially the thyroids and parathyroids, although their actions are different. Removal of the parathyroids increases galvanic irritability. This may be explained by the loss of calcium, as calcium decreases the irritability of the cerebrospinal axis.

Other glands and organs possess the power of influencing the body through the agency of an internal secretion, *e.g.*, the testicles and ovaries. The de-

pendence of the secondary sexual characters on the internal secretions of these organs is a well-established fact.

Another interesting point, but little understood, is the mutual relation of these various internal secretions, *e.g.,* the relation of the hypophysis to the secretion of the thyroids or to that of the essential sexual organs, or the mutual relation of the internal secretions of the pancreas, adrenals, and thyroids, which constitutes an unsolved problem.

These ductless glands discharge into the circulation specific hormones, and probably play an important rôle in the production of immunity.

Caution is, of course, needed in interpreting these interesting phenomena, but when we consider the functions of these glands, and their vital importance to the organism, we cannot but be impressed by their apparent value in the determination of adaptability and consequently in the production of the different races of mankind.

Excessive pigmentation may be due to altered activity of the adrenal glands; of this we have sufficient evidence in the pathology of Addison's disease. May it not be that an excess of sunlight, combined with the well-known effect of altitude, has exerted a decided modifying action on the adrenal glands of the negroes? As regards the chemical power of light, advanced by von Schmaedel in 1895, it is held that the black pigment renders the skin of negroes insensitive to the luminous or actinic effects of solar radiation, which are far more destructive to living protoplasm than the mere calorific effects. Light tends to destroy any substance that absorbs it; man and animals develop therefore, when needed, a protective armor of pigment.

Altitude has operated in differentiating the inland people from those inhabiting the coast, and has exaggerated the ethnic peculiarities of given nations. The pigment of the skin tends, as a rule, to be lighter in the higher altitudes as well as in the higher latitudes. The influence of these two factors on the suprarenal bodies would appear to be the same.

In the case of the excessive pigmentation of the negro, we are told that his dark skin is associated with a dense cuticle, diminished perspiration, smaller chest volume, and less respiratory power, together with a lower temperature and more rapid pulse. Compare this with the symptoms observed in Addison's disease or when extracts of the adrenal gland have been administered medicinally or experimentally, and the similarity of action will be evident.

The effect of temperature is very marked not only on the body in general, but on the growth of the hair in particular. A low temperature is apt to result in the formation of a good protective coating, while a high temperature acts in the opposite way. High temperatures reflexly stimulate the adrenal glands to produce an excess of pigment, while diminishing the capillary covering. Low temperatures have opposite effects. A glance at the distribution of races shows that the greater amount of pigment obtains in the tropics, and that as one advances northward the complexion gradually lightens, being dark brown in Egypt, light brown in north Africa, deep olive in the Mediterranean, olive in south Europe, brunette in central Europe—until one comes to what has been called the faded brunette, or blonde, of the north of Europe.

Similar effects have been produced on the original inhabitants of our continent, the Indians, in whom different shades of coloring obtain according to the latitude.

Abundance or scarcity of food is a most prolific cause of variability through acceleration or retardation of the function of the glands in question. Certain kinds of food have in all probability a decided influence on their function; thus, oatmeal is said to be stimulating to the thyroid gland. In the light of this view, the production of a certain kind of food, characteristic of or more easily obtained than others in a given locality, is likely to influence the internal secretions of the inhabitants thereof, and, accordingly, to affect their development. The influence of food on the temperament of man occupied the attention of the earlier physiologists, who came to believe thoroughly in the different effects of various foods and condiments on the human organism. Liebig maintained that excess of meat eating made man more violent and even ferocious. At present physiologists are more concerned with the nutritive value of food, as measured by the number of calories yielded, than with its effect on any particular system of the body. Still, there is here an uncultivated field, a virgin soil, capable of generously repaying the investigator.

In reviewing literature we are confronted with the great diversity of opinion existing among the masters, and, although they all admit—Darwin, Nagelis, De Vries, Klebs, Bailey, and especially Ratzel—that environment exerts a marked effect upon the vegetable and animal organism, they do not make clear how these effects are produced. This has been due, in part, to the inherent difficulties of explaining the phenomena presenting themselves and the multifarious factors entering into the problem.

The question stands thus: How does the organism react to the environment? How does it adapt itself to new conditions? In this apparently mysterious process, it seems to me that the internal secretions play a preponderant rôle in that they permit the organism to adjust itself to external influences. The reaction of the ductless glands to these influences tends to produce variations, which are likely to be transmitted to succeeding generations. Such advantages as the organism may have acquired through the continued readjustment of the ductless glands result in the survival of the individuals best fitted. The influences exerted being dissimilar in different localities, differentiation occurs, and this is the explanation of the existing variety in races.

PSYCHOTHERAPY: WHAT IT IS AND WHAT IT IS NOT.

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I.

Mental treatment of human disabilities can do so much good when wisely employed, and so much harm when injudiciously, that all thoughtful persons do well to get a clear notion of its elements and scope. The principles of any kind of treatment really efficacious oftentimes seize upon the communal consciousness, become popular, greatly exaggerated. The sense of proportion is lost; enthusiasm is induced far beyond reasonable limits. The consequences are often disastrous to individuals, physicians being sadly puzzled when called upon to undo or correct baneful results. This has been especially noticeable of recent years since perilous optimisms have been aroused by irresponsible mental-healing cults.

Much benefit has indeed followed in many pitiful conditions, but it has been more than offset by the many fatal endings of neglected infections, progressive disintegrations or injuries. In the beginnings of threatened or actual mental disease, the evil effects of ignorant overconfidence, of regarding the phenomena as merely vagaries, mental wavering, exhaustion states, or confusing complexities, not seldom induce psychic catastrophes, disintegrated families, and even irremediable insanities.

Mind cures or faith cures are of great antiquity and well-proven efficacy. When wielded by persons of vigorous common sense and caution they have proved a boon in all ages. To be sure, suggestion and symbolism have been so largely instruments of the mystics, fakirs, or other opportunists and self-seekers that men of critical scientific acumen are repelled by such claimants, and hence tend to belittle their resources.

Now that studies in psychology are paralleled and supplemented by researches in physiology, psychiatry, and pathology, the mental factors are being reduced to a determinable basis. The essential principles of mind control are so simple and reasonable that they can be readily, if crudely, applied by any alert, well-meaning person wholly ignorant of the baffling complexities of a disordered body or mind. Often enough, all that is needed for conspicuous success in dealing with minor psychoses is the encouraging or explanatory word spoken in season. It is both easy and eminently proper for clergymen to counsel hope, resignation, or faith; for a drug-clerk to administer some well-tried, "simple" remedy; for the foreman in a lumber camp to bind up an axe-cut. Within their limitations, any or all of these render good service, and at least four times out of five the measure is sufficient *when the problem is uncomplicated.*

Such persons are safe guides within their capabilities, training, and experience. They become menaces to the community when they branch out and assume the rôle of universal "healers." A tugboat captain, be he ever so competent, who struts out of his class and assumes the command of a transatlantic liner becomes a potential murderer.

The extent to which overbold ignoramuses can imperil life and reason reaches its zenith in the serene fatuity of the teachings of "Mother Eddy."

The apostles of this flamboyantly prosperous cult, inflated with self-approbation, repudiating human responsibility, reckless of truth and experience, assume the non-existence of disease as the cornerstone of their creed.[1]

II.

A large part of human suffering is well known to be due chiefly to disordered states of mind. Every thoughtful person can recall instances where a series of misapprehensions, broodings, false interpretations, inexact, oversolicitous self-observations, have created painful and damaging impressions. Sometimes these lead to personal suffering, illness, or such wrongful opinions of others as to constitute gross injustice. It is a blessed mercy when one's own good sense happens to be (*au fond*) normal and comes to the rescue before irretrievable hurt is done.

Too few are equipped with that measure of robust, well-balanced mentality, constituting judgment, which can usually be relied upon to steer one through the long series of trials and perils that come to all, growing ever more complex as age advances and confusing experiences multiply. Not many escape these morbid mental states, of less or greater severity or permanence. It often happens that, owing to physical weaknesses caused by temporary bodily ailments, or by original or induced peculiarities of mind, especially by erroneous education, emotionalism, hypersensitiveness, or latent morbid tendencies, a condition is produced analogous to progressive mental disease. This derangement of consciousness should be treated precisely like a physical illness: by accurately determining its exact nature, causation, and type, how it can best be corrected, and then by skillfully applying the right remedies or procedures. Nowadays, thanks to the thorough researches of psychologists (many of whom are experienced physicians, trained in diseases of the mind and nervous system), it is entirely feasible to rectify most of these morbid mental states, or check them in their earliest incipiency.

Moreover, precisely as manifold perils arise in entrusting the intricacies of the body to uneducated persons, however willing and zealous, so is it much more dangerous to delegate the ailing *mind* to anyone who does not possess adequate qualifications for dealing with this marvel of complexity.

Note the relative importance of passing through life with a damaged leg,

[1] Very different are the purposes and aims of those who practise forms of mental healing called by sundry unsatisfactory names, among which are "New Thought," "Metaphysical Healing," etc. It has been my privilege to know and co-operate with some men and women laboring unselfishly and efficiently along these lines. Recognizing their limitations, they achieve a vast deal of good, nobly supplementing the labors of the clinician and often greatly illuminating his problems.

kidney, or even an eye, which at worst is only partial disability, in comparison with a damaged consciousness, which renders the sufferer a derelict indeed.

Let it be clearly apprehended that the subject of mental healing, or psychotherapy, is vastly more than wholesome suggestion, a disabusing of the mind of silly or wayward notions, an appeal to instinctive beliefs or to any or all the consolations of religion. Each one is welcome to entertain any sort or kind of faith or conviction; practise whatsoever form of worship he or she shall elect, and none the less may fall into such depths of psychic bewilderment, misery, or disease as the good Lord shall decree. True, an abiding faith in the highest ideals, if consistently developed and conscientiously utilized, will go far toward comforting, sustaining, renewing lost vigor. Religion binds one to the Rock of Ages, the foundation of force. No power that mere reason can exert is comparable to purity of belief in an almighty, beneficent first cause.

Faith without works is admittedly inefficient. Let us cherish faith unwaveringly, but neglect not the good help of pure reason, the unvarying laws of nature, and loftiest standards of conduct. Trust, by all means, in the boundless power of nature's God, who achieves his purposes only by natural laws clearly ordained and long perfected. Unchanging, even merciless, are the manifestations of these laws. Departure from them would result in chaos. Believe always in the great gifts of God, the chief of which is divine, unlimited powers, restricted only by ignorance of how to use them.

Skilled experts have searched out and formulated these laws, have put them to good use in unraveling what appear as mysteries, and this too in many departments of exact science. The happiest men and women are those who instinctively appreciate the beneficence of these divine laws. The moment they arrogate to themselves powers which it is impossible for themselves to possess, then they will miserably fail. The resources of the human being are enormous, but of little use unless ascertained and made available. These latent energies are both physical and mental and cannot be divorced.

It is this principle of immense inherent potentialities capable of being made available that is utilized by the most learned and successful practitioners of psychotherapy. Vast powers exist in every reasonably well equipped human being. Oftentimes these residual energies become woefully distorted, submerged, cramped, made of no effect. The wise psychotherapeutist studies the problem before him with all the knowledge and skill of one well versed in any exact science. He determines, by precise methods and with full knowledge of analogous instances, just what the condition exhibits and requires, and then applies the needful measures of conservation. Always success is in proportion as the right kind of appeal is made to the underlying stores of power, setting free the streams of feeling and thinking to flow again unhindered along the channels of daily life; in short, by dealing with things as they are, and not by permitting the imagination to run riot, or fanciful desires to become rampant.

III.

The purpose of psychotherapy is to reduce a disorderly, inefficient mind to an orderly, well-balanced, efficient one. In short, it is a process of mental

training. It is, rather, a *re*training, because the essentials of right training have never been in anyone perfectly attained. Results follow in proportion as the operator knows his subject and the patient is sincerely co-operative.

Some minds are inherently well poised, but most have suffered greater or less derangement in normal responsiveness to external and internal impressions. There is then disharmony between receptivity, interpretation, impulse, and determination. Where disharmonies have become habitual, not only are thinking and volition impaired, but this tends to disintegrate the body, and disorder or disease follows. Disorders so caused vary in proportion to (*a*) the character and progressiveness of the physical causes at work, and (*b*) the susceptibility of the sensorium or organ of thought to go astray and to dominate the physical processes for good or evil. Those who undertake the care of the sick, the depressed, the confused, must be aware of the nature and extent of the mental conditions requiring encouragement or correction.

To use successfully any form of psychotherapy, the operator must be reasonably familiar with the structure, function, and disorders of both mind and body. A large acquaintance with either psychology or medicine will not alone suffice. It is essential that the action and interaction of each department of vitality be clearly comprehended.

In normal persons there is a direct, clear, instantaneous intercommunication between that part of the mind which receives impressions and that which is conscious of them. It is upon the information received by one part of the mind from the other that a correct conception is based of our physical status and other vital phenomena, and by this means our decisions and actions are determined. When the communication is normal between the observing, the receptive, reasoning mind and the believing, deliberative or reflective mind, then alone is there right control of thinking, feeling, and doing. When this communication is interrupted or broken, or co-ordination is imperfect, then begins hesitation, doubt, fear, depression, incompetency, or mental anguish. Mental distress or indecision is due not to lack of nervous force so much as to waste, to prodigality of effort, bad habits, inexact methods—"billiard-ball ratiocination." This whirl of ineffective forces is, moreover, cruelly exhausting. Hence arise asthenias or weaknesses. The mind then surrenders and no longer fights; so brain control is vitiated or lost.

A well-controlled mind is aware that it can put forth any amount of force, and habitually does energize normally and clearly. The best preparation for the future is to act confidently and conscientiously in the present.

The psychopathic, neurotic, or psychasthenic person is a mass of confused feelings, incomplete actions and reactions: a compound of half-formed impulses, wishes, decisions and indecisions, hopes and fears, in short, unclear judgments. Hence arise morbid tension and exhaustion states. When he is attempting to pursue an idea the elements of decision are perceived vaguely; frantic efforts are often made, producing exhaustion, ineffectiveness, alarm, and despair. An uncontrolled mind squanders uselessly an amount of force oftentimes sufficient to accomplish wonders if controlled and rightly directed. Force must be conserved; otherwise, disorder or disease in tissue follows. The will

is not a fountain of force so much as a toolholder for the lathe, to direct and put the power where and when it will do the most good.

Forethought is necessarily inaccurate in details. To exercise forethought is far more exhausting than to act serenely and efficiently as problems present themselves.

Many ailing persons become so merely because of dwindling in robustness of purpose and unawareness of their latent capabilities. They often possess acute perceptions and clear intuitions, which, properly controlled, would place them above the average of efficiency. If their consciousness is allowed to become or remain inert, passive, then will external influences turn aside the force of wholesome decision, mar judgment, induce doubts, and hence blunders are often made. The normal mind is poised, flexible, in both passive and active states, because of well-balanced centers of force and outlying executive mechanisms. The psychasthenic or psychopathic lacks confidence because of previous disappointments in determining or carrying out purposes; hence fear grows, blunders multiply, distress or despair follows. To escape psychic hypertension, morbid agitation, remember that volition should precede action and not be consciously exerted during action. Evil temper, sullenness, deceit, selfishness, and all the rest of invalid uglinesses are the outcome of abnormalities in volitional poise, in determining what to do and what not to do.

Abnormal fatigability leads to hypersensitiveness to stimuli, induces emotional anomalies, confusing alternations of sensations, vitiations of impressions, elementary hallucinations. It also leads to mental irritability, distractability, and incapacity to fix or maintain the attention. Hence follow despondencies and hypochondriacal ideas, all readily influenced by good or bad impressions.

Psychasthenia, mental weakness in its varied forms and causation, is often due to lack of correct early training, development, or conservation, and presents a group of puzzling and baffling phenomena. There follows a host of irrepressible impulses, ideas, persistent morbid questionings, endless "whys?" and "wherefores?" apprehensions, multitudinous phobias, mental agitations, diffused emotional disturbances, cloudy memory-pictures, anomalies of sense-perception or character and action, shown in vacillations, insistent perplexities, religious fears, obsessions, and the like vagaries of weakness and anxiety.

IV.

Now, how to get at the sufferers; how to learn of vague, benumbing miseries; secure confidence, reach erring consciousness?

The great desideratum is to put the patients in the way of realizing exactly the cause of their wretchedness, where it may lead, and to set their feet upon the right road to emancipation.

Some will seek the aid of their family physicians, who then must be alert and act wisely. Others, a larger number, especially women, seek the advice of clergymen. By far the largest number don't know what to do, but drift along and "let concealment work like a worm i' the bud"; hence go from bad to worse. Fortunately, the clergy (whose duty it plainly is to meet these and similar needs) are becoming aware of their privilege. Admitting

the best intentions, zeal, large-heartedness, sincerity of desire, it is safe to say that exceedingly few are qualified. There is needed special training in psychology and some correct knowledge of mental disease (easily acquired, but seldom attained). All the more credit, then, to those splendid exemplars who have made a success of encouraging all those who are heavily laden with obscure ailments to come to them, offering special services and aid in the solution of complex woes.

Nor should they allow urgent desires to blind them to the fact that the co-operation of qualified physicians is a *sine qua non*. Here the altruistic professions meet upon a common ground of duty,—constitute two agencies in helpfulness in which permanent success depends upon the right disposition of the physical as well as the spiritual factors.

Moreover, psychic factors, when disorders and cumulative distresses are pronounced, always demand for solution aid from a qualified clinician.[2]

It is instinctive in the human heart to cherish a faith in high, pure, ennobling ideals. To pursue them is most salutary and comforting; to act in accord with them will double anyone's power. A sharp distinction can be drawn between blind religious faith and a philosophic faith based on science and perfected standards of belief in the limitless resources of nature's God. The religionist *sees no limit* to the power engendered or conceived, whether organic or mystic; *hence may be dangerously optimistic*. The scientist appreciates the limitations of physical and mental power and exhibits at least commendable caution. The former is diffusive, the latter conservative.

V.

How far hope, faith, confidence in the powers of things not visible or measurable can lift an organism to higher planes of health has not yet been determined. We do know that tuberculosis often spontaneously subsides; it is claimed that cancer also may and does subside most readily when hope is highest. There is no proof adduced of structural disintegration being restored by faith.

We cannot as yet measure or set a limit to the autoprotective forces.

Functional neuroses pure and simple are rare, if they exist. Psychosis is a disorder of function, and when curable it is chiefly through mental rehabilitation. Most disorders of the mind are evidences of derangement of cells, tissues, and secretions due to departures from structural and functional integrity.

[2] Among the original contributions to world-advance made by America is the so-called "Emmanuel Movement." This pioneer movement, initiated by Rev. Dr. Ellwood Worcester and Rev. Samuel McComb, both of Boston, is now past the experimental stage. It consists of a well-established, thoroughly organized system of co-operative human betterment, composed of spiritual healing, clinical investigation and treatment, and social service. Those who still criticise this movement are seldom aware of the actual facts, permit partisanship to blind them to the methods employed and results obtained, or indulge in a flood of flippant verbigeration. It should be further known that the "spiritual help" given is practically free from all sectarian limitations; also that this movement has extended to many States, and to England (the London "Home of Health"). Among the Roman Catholics similar work has long been done. There are many excellent books on "Pastoral Medicine." Priests uniformly co-operate intelligently and efficiently with physicians.

That more or less serious beginnings of disease can be checked by eliciting the forces of confidence, hope, and faith no one can deny, but those who assert that cures are wrought by optimism alone cannot adduce proof.

When that part of the mind which rules the vital forces is set in motion it tends to proceed normally so long as thinking power is in the ascendency. A normal mind thinks of only one thing, or can concern itself with only one thing, at a time. A central, dominant idea is sufficient to command all reserve energies. An idea which has suddenly become dominant may remain so for good or evil.

A trustful expectancy absorbs the foreground of consciousness. An optimistic, all-pervading conviction, especially if of a religious coloring (faith), can bring any opposite thought to a standstill and lift the whole organism to splendid planes of efficiency.

Let a healing spring, climate, shrine, relic, person, or whatnot acquire a big enough reputation and it will lift all the neurotics and psychopathics who use it to a temporary robustness. Even those who fail of benefit will be content to blame themselves for some lack of faith, or omission of some co-operative agency, rather than cast doubt on the potency of the healing force. Records of cure are made at the high tide of ecstatic belief; the ebbing tide is not estimated or reported.

Much more of the gain acquired by any psychic agency would be held if the individual could only have wise guidance and encouragement when the first flush of optimism is checked by stern realities, by the obtrusion of persisting uncured or incurable states. The duty of the wise physician is to take all factors into consideration and show the sufferer precisely where he stands: how much of benefit he may expect, and how much he must learn to bear philosophically or endure patiently.

One can sympathize with those (especially those physicians) who express disgust at the overstatements of mind-curists. A vast amount of rubbish is said and written upon the subject. The shallowest kind of thinking is done, if thinking it can be called which is nearly all feeling, frantic desires, arrogant or beatific assumptions. Yet these optimistic utterances are accepted as truth by an immense array of estimable persons, and often with good results; but also *with many grave perils and resultant catastrophes.*

VI.

The subject of healing is large and complex, involving a long train of biological processes, many of which proceed safely and spontaneously toward restoration. Then again, many of the processes are devious, obscure, and tend toward such kinds and degrees of cell destruction and disintegration as require the utmost expert knowledge and care to guide aright the forces of growth and repair. Adverse factors often enough supervene, confounding nature and expectation. Among these are defects of development in the physical and psychic domains, infectious agencies (whose natural history is now fairly well known and defined), along with insidious changes arising silently from within, many of which can be known only by their evil effects. Admitting

that the infections follow moderately uniform courses and tend to subside owing to the amazing self-protective powers in a normal organism, yet they too often leave destructive effects upon organs and other tissues, only to be determined by patient vigilance of skilled experts. Unless these are permitted full opportunity for early observation, the pathological changes cannot be known or corrected till so late as to baffle any sort of healing measures. Then there are often puzzling contributory causes, constitutional diseases, disorders of metabolism, depressions of, or overaction of, the great regulative mechanisms (the ductless glands), vitiations of vital processes and essential structures, and many other hurtful influences.

These forces for evil not seldom are encouraged or amplified by slight earlier departures from the norm, in original structure, in impaired development, in divers derangements leading to lowered nutrition and loss of functional integrity. Some are relatively reparable; others no more to be restored than a lost limb, a crumpled heart-valve, a pipestem artery, sclerosed spinal cord fibers, a collapsed lung, liver, or similar irretrievably damaged structures. No sane person would claim that the most serenely adjusted mind could rebuild these, any more than it could restore a ruined Greek temple.

None the less, the devotees of religious optimism are often heard to assert that even such miracles of restoration are both possible and current. Methods or conditions for healing are not dependent upon opinions, wishes, or beliefs, unless fortified by an array of actual, properly observed and analyzed happenings, wherefrom correct inferences are drawn and whence trustworthy conclusions and remedial measures can ultimately be deduced.

This object progressive science is constantly engaged in pursuing, always cautiously, and with subjection to drastic external and internal criticisms. Scientists never "stand pat" upon decisions, but are ever open to severe self-searchings and revisions.

At the same time it is admitted that facts of deepest significance exist abundantly throughout history, all tending to prove that many disabling and distressing physical conditions can be and are removed and seemingly cured by well-directed influences exerted on the consciousness of the sufferers. How far these effects go toward structural repair can only be determined by open-minded researches along exact and critical lines. Doubtless, as psychotherapeutic knowledge grows broader and more precise, we shall be gratified by the exhibition of more wonderful results. Now we can only insist upon the irrefutable fact that they will proceed only along infallible lines laid down by nature and nature's God, who works in mysterious ways his wonders to perform, but invariably by natural laws long foreordained and perfected.

VII.

We may venture the opinion that the future triumphs of psychotherapy will justify the hopes of the most optimistic in proportion as desires for salvation are modified by accurate observation and precise records of fact. I for one am disposed both to hope and to expect results from scientific psychotherapy far beyond what we now are capable of predicting. At present there is no

ground whatever for believing that the highest efficiency of mental or spiritual influence can possibly restore structural disintegration when once it is established.

It is nature's way, in manifesting the efficacy of those powerful forces of self-restoration which indeed can only be ascribed to a divine origin, to fill us frequently with surprise at her generosity, even lavishness, in diverting the full power of morbid forces. Nature's way is achieved partly by unconscious processes of self-repair, and partly by providing us with intelligence whereby to select and apply precautionary measures. She does this with especial brilliancy in eliciting the forces of hope, courage, and serene confidence in those inherent beneficent powers of which we are all more or less confidently aware, but which are at present well beyond the bounds of exact knowledge. These forces are unchangeable in their rulings, but the good God has endowed human beings with a finite, but most useful, measure of wisdom, whereby we can so modify the direction and degrees of these inevitable forces that they can be adapted to our best ultimate good.

It must be remembered always that those who are readily impressed by the glittering promises of "Christian Science," "New Thought," and other irresponsible creeds are not themselves possessed of the normal degree of poise, judgment, or robust personality. They have never been supplied with, or regularly developed in, symmetrical vigor and broad-mindedness. Poise and judgment are characteristic of those who never need psychic rehabilitation. We see this demonstrated in splendid personalities who have achieved great successes, whether for good or for evil.

The overimpressionable ones may be highly useful, lovable members of society, but they do not constitute the backbone of the world. Indeed, the world could get along without some of them a trifle better than with them. They are among those who must be carried along, allowed for, have special adaptations made for them, places provided for them to work where they can fit in. Seldom are they able to make places for themselves, or struggle to the top against odds.

From the foregoing it should be plain that the problems involved in the simpler psychoses and somatopsychoses, in short, "tangled skeins," are grave enough to demand some training in psychology and neurology on the part of those who undertake their cure. The perplexities become serious indeed when the phenomena displayed (however similar superficially) indicate deep-seated mental derangement or progressive disease of mind.

To deal successfully with these grave conditions a training in practical psychiatry is essential. It is true, certain of the early insignia of insanity are removable, cures can often be effected by means of a thorough psychoanalysis, bringing into the conscious memory fundamental repressed experiences and exhibiting them to the patient in their true significance and proportion. The interesting fact has been recently demonstrated that those who exhibit the more complex confusion states, exhaustion and toxic postinfective psychoses, are often, indeed usually, persons most worth saving. These conditions are often found at their worst among the more intelligent, highly differentiated

and elaborated mentalities. Enormous advances in mental conservation have been made in recent years, of which it behooves every practitioner to be at least aware. In this Americans have been large contributors. Psychotherapy, while capable of being utilized by any competent practitioner, offers resources of the highest value to the more learned alienist.

Cyclopedia of Current Literature

ALOPECIA, ULTRAVIOLET LIGHT IN TREATMENT OF.

Six cases of alopecia areata and 3 of alopecia totalis were treated by the author with the ultraviolet rays. Many of the cases had already undergone topical treatment with all the usual remedies. The current available being weak, each area was subjected to half an hour's exposure. Good reaction with peeling of the skin followed the exposures, the hyperemia lasting a week as a rule, occasionally longer. The treatment was not repeated until most of the hyperemia after the preceding exposure had disappeared.

The results obtained included six cures, after treatment ranging in duration from three weeks to thirteen months. One other case, previously quite at a standstill, showed a growth of hair almost as soon as the treatment was commenced. In 2 cases of alopecia totalis there was no result. In the areata cases it was noticed that the hair usually spread in from the periphery toward the center, so that the space became gradually lessened and finally disappeared. J. Delpratt Harris (Lancet, July 6, 1912).

CARBON-DIOXIDE SNOW, NEW METHOD OF APPLYING.

Having ascertained that solid carbon dioxide was soluble or miscible in ether and in absolute alcohol, the author has studied the effects of such a mixture as a stimulating or cauterizing agent in certain skin affections. When carbon dioxide in the solid form, as obtained from a cylinder of compressed liquid carbon dioxide, is added to ether or alcohol, the mixture at first effervesces or boils violently, but after a few seconds, upon further addition of carbon dioxide, a colorless semigelatinous body is obtained. The temperature of solid carbon dioxide is — 79° C., while that of its solution in ether is considerably lower. At this temperature the ether evaporates very slowly, and practically the gas which escapes is the carbon dioxide. For all therapeutic purposes the mixture is what may be considered a preparation of liquid air, but without its unstable character and dangerously low temperature.

The liquid can be applied on a camels' hair brush or with a swab of cotton-wool on a wooden or other non-conducting holder. When it is first painted on the skin, a slight crackling sound is produced, as if the area were being burnt, but no visible fumes are evolved. The area touched is at once frozen, and it can be maintained so as long as desirable by continuous applications.

Only more or less superficial lesions can be dealt with by this method, as it is not possible to exert any great amount of pressure; a certain amount of inter-

rupted pressure can, however, be exerted by applying the remedy on a swab or non-conducting holder for a few seconds at a time. For superficial lesions, the solution is far superior to former methods because the part under treatment is exposed to view the whole time and the area dealt with, however irregular in outline, can be exactly defined. It is also much less painful than any of the pure acids, slightly less so than the solid stick, and the cosmetic effect is much better. The sensation produced is merely a smarting or pricking one, and the discomfort ceases shortly after the part is once frozen. The method is also advantageous in that no special apparatus is necessary, a cylinder of compressed liquid carbon dioxide, together with some ether or absolute alcohol and a porcelain dish or watch-glass, being all that is required.

The diseases treated so far were chiefly various forms of lupus vulgaris and erythematosus, rodent ulcers, warts, and other horny growths. The method was found most satisfactory for patches of lupus vulgaris, especially when situated on the face. The interior of the nostrils and any other mucous membrane visible from the exterior could also be conveniently treated. If the mixture is painted on continuously for about a minute, a bleb or blister appears a few hours after. When this ruptures, a superficial ulcerated surface is left, to which small doses of X-rays may be satisfactorily applied during the healing process, and the part dressed with mild antiseptic applications. W. Knowsley Sibley (Practitioner, July, 1912).

DIABETES, RICE IN DIETETIC TREATMENT OF.

The author has employed rice as the carbohydrate element in the antidiabetic diet in 19 cases of moderately severe and of grave diabetes, as well as in a much larger number of cases with milder types of the affection. He points out that the "polished" rice of commerce furnishes substantially nothing to the organism besides an easily digestible starch which, given in suitable amounts, is practically all absorbable and ready to serve as a calorifacient. The commercial cereal is therefore peculiarly adapted to supply carbohydrates without any protein or mineral admixture of consequence. This deficiency in protein and mineral substances gives rice the advantages of an indifferent food in so far as the formation of toxic protein and other useless products is concerned. It also facilitates the reduction of salts in the diet and the calculation of absorbable albumin necessary at every stage of the diabetic condition.

Rice being nearly entirely absorbable, only a comparatively small quantity of it is needed by the diabetic organism. It is not the purpose of the rice to supply the total food requirement as does von Noorden's standard oat diet; the cereal may be incorporated with any properly adjusted protein-fat combination. Rice as a single form of carbohydrate and suitably combined may be employed by the diabetic for more protracted periods (for months and even a year in the author's patients) than the oat diet. It may be prepared in a number of different ways, avoiding monotony and always furnishing a palatable dish.

Sixty grams of the absorbable starch granule of rice generally produce the antiacetonemic effect of 250 grams of oats in the standard mixture. Pronounced cases of acidosis are frequently entirely relieved by the ingestion of 100 grams of rice. The amount of rice requisite to remove the acetonuria does not

necessarily increase the intensity of the glycosuria; often the latter will even temporarily decline in a marked degree. The *modus operandi* of rice is different from that of cereals rich in cellulose in that some of it is assimilated by the diabetic, as shown by the frequent increase in weight and vigor of the patient, while material rich in cellulose constitutes in effect a starvation diet. Heinrich Stern (Medical Record, June 29, 1912).

DIARRHEA OF GASTRIC ORIGIN.

Diarrhea occurring as a direct consequence of failure of the stomach to produce its normal secretion of hydrochloric acid is discussed by the author. Such anacidity occurs in 4 groups of cases: (1) as a purely functional disturbance, either temporarily or over prolonged periods of time, with retained ferment secretions; (2) in achylia gastrica, a condition in which there is a permanent absence of all gastric secretions; (3) in pernicious anemia and certain metabolic disorders, as diabetes; (4) in carcinoma of the stomach.

The *clinical features* of diarrhea secondary to gastric anacidity are usually definite, so that often the diagnosis can be suspected before the stomach analysis is made: (1) Diarrhea, the most striking feature of which is its occurrence early in the morning and during the forenoon. Two movements generally take place before breakfast and one to three more before the midday meal. (2) The stools are liquid, inoffensive as a rule, and show macroscopic particles of undigested food, especially fruit and vegetables. In other cases the stools are soft and yellow, and show an excess of fatty acid crystals. Mucus and blood may occur during exacerbations of the symptoms. (3) Flatulence and peristaltic unrest constitute the rule, especially in the early morning hours. There may be griping pains. Irritability of the bladder, relieved after defecation, is not uncommon. (4) Gastric symptoms are often lacking or are overshadowed by the condition of the bowels. The appetite is generally unimpaired, although the patient may be afraid to eat. Occasionally there is slight nausea. (5) Loss of weight and strength may progress quickly. Early in the disease, and in the absence of complications the patient does not look ill. Sometimes there is marked secondary anemia. (6) Indicanuria is generally pronounced. Muscular pains and slight recurring arthritis are not uncommon, or there may be a definite neuritis. (7) The stomach empties itself quickly, so that it is advisable to pass the stomach tube in forty or forty-five minutes after an Ewald test-breakfast has been taken. In the material thus obtained the bread particles are coarsely divided and appear undigested, and the fluid portion is clear, thin, and colorless. The usual tests for free HCl are negative, and the total acidity is usually below 10. Lactic acid, while generally absent, may be distinctly present, even in cases showing no evidence of stasis.

In the *treatment* the essential measure is the administration of large amounts of hydrochloric acid, for the purpose of supplying the natural deficiency. Not only is this acid indispensable for the activation of pepsinogen into pepsin, but on reaching the duodenum it initiates the flow of pancreatic secretions. It also acts, in a sense, as an intestinal antiseptic. The author prescribes 30 drops of diluted hydrochloric acid in a full glass of water one-half hour after meals, to be repeated again in one-half hour. Sometimes he has substituted for the mineral acid, tablets of acidol or hy-

drochloride of betain, a substance derived from molasses in the manufacture of beet-sugar. When dissolved in water, or in the stomach, this substance liberates hydrochloric acid. It is costly, but much more palatable and convenient to carry about than the acid.

Stimulation of the glands of the stomach to resume their function is best accomplished by the giving of strong meat broths as the first course of meals, preceded by full doses, up to 30 or 35 drops, of tincture of nux vomica. In addition these patients should be encouraged to have their foods well salted. If any dietary restriction is indicated, it is the proteids which should be reduced. Buttermilk is especially valuable in gastric anacidity. Most patients can be induced to consume three pints of it a day. When they tire of it, or if it is not well borne, one of the various lactic-acid-bacillus tablets may be given.

If the general nutrition is much impaired, and there is associated visceroptosis and possibly gastric motor insufficiency, the patient will be much benefited by assuming the recumbent position for an hour after each meal. Further treatment may include an abdominal supporter, and measures to combat anemia, nervous states, and other conditions favoring gastric anacidity. Douglas Vander Hoof (American Journal of the Medical Sciences, August, 1912).

ESOPHAGEAL CARCINOMA, EARLY DIAGNOSIS OF.

In cancer of the upper third of the esophagus the author has found what he terms progressive retrofixation of the tongue to be a very early and characteristic sign. The tongue cannot be protruded by the patient more than a few centimeters without his feeling pain, and when the examiner exerts traction on the organ an unusual degree of resistance is noticed. This sign was not observed in cases of functional spasm, tuberculosis, or syphilis of the esophagus, even at an advanced stage of the disease. It is probably due (1) to a periesophagitis attending the cancerous process, which binds the esophagus to the trachea in front and the prevertebral fascia behind; (2) to fixation of the esophageal mucous membrane to the outer layers constituting the wall of the organ, thus preventing free motion of the lingual mucous membrane, with which it is connected, and (3) to changes in the hyoglossus, chondroglossus, and stylohyoid muscles. Guarnaccia (Archives internationales de laryngologie, d'otologie, etc., July-August, 1912).

HEXAMETHYLENAMINE IN AFFECTIONS OF UPPER RESPIRATORY TRACT.

This drug was employed by the author in 22 cases of acute bronchitis, 12 of acute rhinitis, 8 of influenza, and 1 of chronic frontal sinusitis.

Most of the rhinitis cases were put under treatment within less than twenty-four hours after the onset, *i.e.*, before a free secretion had been established and when slight headache and "stuffiness" were the sole complaints. Each patient was kept indoors a day or two, given 4 ¼-grain (0.015 Gm.) doses of calomel, with soda, and six hours later 2 teaspoonfuls of magnesium sulphate. Children 10 years old were given 4 grains (0.3 Gm.) and adults 10 grains (0.7 Gm.) of hexamethylenamine, dissolved in half a glass of water, three times a day during the first day and twice a day during the following day or two. Of 8 cases seen before secretion had been established, 6 developed a scanty discharge on the following day, which disappeared on the

third day; of the other 4 cases 2 developed a moderate and 2 a profuse discharge, which disappeared on the fourth day. The sensation of "stuffiness" and headache were nearly always relieved on the day after beginning the drug. Complications such as sinusitis, laryngitis, and bronchitis were entirely avoided.

In the bronchitis cases, 17 of which had a slight but irritating cough and 5 a somewhat loose cough when first seen, the treatment consisted of keeping the patients in bed as long as fever was present, excluding meats and pastry from the diet, securing good ventilation, and giving calomel and soda and magnesium sulphate, as well as hexamethylenamine in the doses already named, 3 times a day for three days, twice a day until the cough subsided, then in half doses twice a day for three more days. Every case was well in from four to five days; free secretion was promptly established, and all other symptoms subsided within three days.

In the influenza cases, all greatly prostrated, the treatment consisted of the routine hygiene and diet, a mild purge, acetphenetidin in moderate doses for pain, and hexamethylenamine in full doses 3 times a day until the temperature stayed below 100° F. and the symptoms were much improved; then half doses until the temperature stayed normal, and finally one-third doses for a week. All patients were well within from five to seven days, with no complications following.

In the chronic frontal sinusitis case the chief complaint was of a severe pain at the root of the nose and around the right eye whenever the patient had an attack of acute rhinitis. Administration of hexamethylenamine, 4 grains (0.3 Gm.) 3 times a day for a month, relieved this symptom. A. A. Eisenberg (Journal of the American Medical Association, June 29, 1912).

INFANT FEEDING.

Discussing the subject of infant feeding as taught by the German school, the author points out that the intervals of feeding advised in Germany are at variance with those usually recommended in this country. The coagulation of milk begins within two or three minutes after it reaches the stomach, and is completed in ten minutes. The whey passes at once into the intestine and leaves the solid curd behind. The periphery of the latter is then attacked by the gastric juice; after three hours, in the case of cows' milk, the stomach has emptied itself; in the case of mother's milk, after one and a half to two hours. If more milk is taken into the stomach before it has emptied itself, the later milk flows about the curd already present and forms layers around it. Thus, if milk is ingested regularly at short intervals, the nucleus of the curd remains undigested indefinitely. It is therefore apparent that the intervals should not be less than three hours, particularly in the artificially fed. Czerny and Keller recommend five feedings in twenty-four hours, even for young infants. The amount of each feeding must, however, be large,—3⅓ ounces in the early weeks.

For a healthy infant, throughout the first year, the author is of the opinion that the percentage of proteid used need not be small, and may range from 1.50 to 3.00. Particular attention must be paid, however, to the fat, which must be increased only when the infant is thriving, and should range between 1.00 and 3.50 per cent. Maltose is to be preferred to lactose on account of its favorable effect on the weight and the fact that it

is less liable to bring about an intoxication—the "alimentary intoxication" of Finkelstein, the symptoms of which subside immediately on withdrawing this sugar from the diet. Jules M. Brady (Interstate Medical Journal, July, 1912).

INTRAVENOUS ETHER ANESTHESIA.

The author describes Rood's apparatus, devised for this purpose. A 5 per cent. solution of ether in normal saline is used. From a reservoir it flows through a glass dripping or indicating chamber, in which the amount of solution used in any given space of time can be observed, next into a warming chamber, heated by water at 100° F., thence into the vein through a rubber tube and cannula. In addition to the usual preparation of the patient, a hypodermic injection of morphine hydrochloride, gr. ⅙ to ¼; atropine sulphate, gr. $\frac{1}{100}$, and scopolamine hydrobromide, gr. $\frac{1}{100}$, is given about three-quarters of an hour before operation. Complete anesthesia usually requires from three to ten minutes for its induction. The amount flowing in is then reduced to 1 pint or slightly more per hour, to maintain the anesthesia.

The method is specially useful in operations on the head, throat, and neck, as the anesthetist does not encroach on the field of operation. It answers well in cachectic patients generally, and may be employed with advantage in collapsed abdominal cases and in operations attended by surgical shock, such as those for ruptured ectopic gestation, Wertheim's operation, removal of the breast, etc.—that is, in cases where saline transfusion is beneficial. In a case of the author's in which ileosigmoidostomy was performed there was absolutely no vomiting after the operation, although there had been a great deal of necessary manipulation of the intestine.

The procedure is contraindicated in the alcoholic, plethoric, and muscular type of patient, in cases where there are advanced changes in the vascular and pulmonary systems, and in all cases in which transfusion would increase backward pressure on the right side of the heart.

The advantages of the intravenous over inhalation anesthesia in selected cases are summarized as follows: The patient is spared the disagreeable sensations attending the inhalation anesthesia; there is no primary irritation of the respiratory organs or of the heart; a very small amount of anesthetic is used; anesthesia, when produced, is of a calm and placid nature; there are no after-effects; headache and vomiting practically never occur, and pulmonary complications are absent. F. L. Napier (Glasgow Medical Journal, July, 1912).

NEOSALVARSAN.

The relative toxicity of salvarsan and neosalvarsan to trypanosomes was tested by the authors. Neosalvarsan proved actively parasiticidal in dilutions up to 1 in 500,000 in half an hour. Similar experiments made with salvarsan dissolved with the minimum amount of alkali, an amount which would not injure the parasites, showed that in a 1 in 100,000 solution the organisms were still very motile after half an hour. Neosalvarsan was thus shown to be five to ten times more actively parasiticidal than the older preparation.

An important advantage of neosalvarsan over salvarsan is the diminished toxicity to human beings. Whereas injections of 0.7, 0.6, and 0.5 Gm. of salvarsan with one-day intervals would almost invariably be followed by some

toxic symptoms, corresponding doses of neosalvarsan (weighing about one-half again as much) proved usually quite indifferent in the authors' experience. The patients could leave the hospital on the day following the last injection in a perfectly normal or vigorous condition. Patients state that they feel nothing which recalls the fact that anything has been done to them. The authors have seen no symptoms follow the injection of 1.5 Gm. of neosalvarsan excepting diarrhea in some cases, unassociated with malaise. Nausea or vomiting apart from such occurring with the "spirochete fever" was absent. The fever sometimes occurring several hours after an injection of salvarsan, especially in tertiary cases, is still observable after neosalvarsan. The authors consider this as supporting their view that such fever is not an expression of the toxicity of the drug, but is perhaps rather a syphilitic anaphylactic phenomenon comparable to the fever following the injection of old tuberculin.

In general, the importance of neosalvarsan lies in that its diminished toxicity permits of taking another step toward the more frequent attainment of a *therapia magna, i.e.,* allows a more intensive treatment of early syphilis. In primary syphilis, two initial doses may generally be given, followed by a third at an interval of four weeks. In secondary syphilis, 3 injections will be sufficient at first, with a fourth eight weeks later. In tertiary cases the treatment should be continued every two to three months after the initial course until a negative Wassermann reaction has been obtained.

The effect of the new drug upon the Wassermann appears to be similar to that of salvarsan, *i.e.,* in a case of secondary syphilis a negative reaction (as the reaction is carried out in the laboratory of the authors) may be obtained in from eight to ten weeks after such a course of treatment as that outlined.

Administration of neosalvarsan intramuscularly was tried by the authors, though they lately discontinued using this method. In general the intramuscular injections were less painful than salvarsan injections. The pain was nevertheless severe, though by the next day largely diminished or absent. It was found that a solution of 0.1 Gm. of neosalvarsan injected subcutaneously was practically painless; but it led to necrosis of the subcutaneous tissues, which was prevented from involving the skin by aspiration, and resulted in induration which showed little diminution after three months. Accurate injection into the muscular tissues, however, causes much less induration than in the case of salvarsan, and, further, absorption of the injected mass is much more rapid. This being the case, the advantage of intramuscular over intravenous injections, in the formation of a "depôt" of the drug, will be considerably discounted. J. McIntosh, P. Fildes, and H. B. Parker (Lancet, July 13, 1912).

NEUROSES DEPENDENT UPON ERRORS OF INTERNAL SECRETION, TREATMENT OF.

Many neurasthenics, the author points out, habitually complain of sensations of cold and nervous chills, and are found to have cold hands and feet, to lack in perspiration, to have many irregular muscular pains, and to have a great sense of physical exhaustion in addition to the mental inertia. These symptoms of exhaustion are, however, not attended by any objective signs of heart-weakness. In these neurotics the author has found that the ordinary treatment for neurasthenia with hydrotherapy, rest, diet, and

nerve tonics is greatly aided by the addition of small amounts of thyroid extract to the patient's food. It is not necessary to give more than 1 grain (0.06 Gm.) two or three times a day. The patient's weight should be watched, and if it diminishes the dose should be reduced. Many patients, however, can take as much as 2½ grains (0.15 Gm.) twice a day not only with symptomatic relief, but also a marked gain in weight. The effect should be evident in about ten days in a lessening of the dryness of the skin, relief from the sensation of cold, and a decided improvement in mental activity. The drug may then be omitted for a week, later resumed, and thus continued at intervals.

In 2 cases of mental sluggishness in young girls, with symptoms that some might class as belonging to dementia præcox, the author has seen marked and continued improvement after the use of thyroid extract. In neither case were the symptoms sufficiently marked to warrant the diagnosis of myxedema, but in both the dry, scaly skin, dryness of the hair, and continued coldness of the body suggested the propriety of trying the drug.

Certain neurasthenics are extremely restless, and active both mentally and physically, though unable to keep their minds on one subject for any length of time. They are usually anxious about their condition, and experience a sense of heat in the body which prevents them from remaining in warm rooms or halls and causes them to sleep with only very light bed-clothing. The eyes of these patients are bright, their skin shiny and moist, their hair moist and glossy, and they are usually thin. Other typical features are: a tremor about the hands, exaggeration of the knee-jerks, abnormal sensations of hunger, diarrhea, and excessive menstrual flow. The patients sleep badly, are hypersensitive to sounds, and often complain of sudden flashes of heat. The pulse is often abnormally frequent,—80 to 90. In such neurasthenics as these a suspicion should be awakened that there is an excess of secretion of the thyroid gland. Remedies such as belladonna, hydrastis, and thyroidectin, given in conjunction with the treatment for neurasthenia, are likely to prove beneficial. Ergot and bromides may also be employed. In some cases the application of ice to the thyroid gland for half an hour three or four times a day will be found to diminish its activity. These cases are never severe enough at the outset to warrant thyroidectomy.

Another type of neurasthenia referred to by the author is that in which the patient is abnormally fat, is constantly gaining in weight, suffers from a marked lack of ambition, and has an abnormal craving for sweets. Some of the nervous manifestations, the writer believes it likely, have their origin in abnormal pituitary secretion. In several such cases with marked headache, great improvement occurred after the use of pituitary extract, and many of the nervous symptoms subsided. It is also possible in these cases to do good with thyroid extract, in doses not exceeding 1 or 2 grains (0.06 or 0.12 Gm.) a day for ten days, followed by an intermission of five days.

When the ovaries for any reason cease to perform their function there may be either a compensatory hypersecretion of the thyroid leading to a sense of heat, flushes, frequent pulse, and mental irritation or a cessation of its function leading to an accumulation of fat, sluggish state of metabolism, and depression and partial dementia. These conditions can be met to some extent by treatment,

—the first by the use of lutein continuously for many weeks, and the latter by thyroid extract in small doses, likewise for a long period of time. M. Allen Starr (Medical Record, June 29, 1912).

OTALGIA, ANGIOSCLEROTIC.

Sclerotic changes in the vessels supplying the ear may, in the author's opinion, be the cause of disagreeable or painful sensations in this organ. These are, of course, merely added to the other morbid phenomena likely to be present. The diagnosis of angiosclerotic otalgia should only be made where all other factors capable of causing pain in the ear have been eliminated. Theobromine or diuretin are of assistance both in the diagnosis and the treatment, owing to their vasodilator property. The dose used should be 7½ grains (0.5 Gm.) 3 to 5 times a day. K. Stein (Wiener klinische Wochenschrift, June 27, 1912).

OXIDIZED PYROGALLOL, USES OF.

The author has found this substance, also termed pyraloxin, and originally introduced by Unna in the treatment of skin affections, to be useful in certain disorders of the ear, nose, and throat. Having obtained an excellent result with it in treating a severe coryza in his own person, he investigated it further and found it to possess a selective beneficial action on inflamed tissues without causing any unpleasant by-effects. When a 1:20,000 to 1:1000 solution is painted over the normal nasal mucosa, pallor and contraction of the turbinates are observed to appear in a few seconds. In acute or chronic catarrhal rhinitis benefit or cure is rapidly obtained by painting the membranes with such a solution. In hypertrophic rhinitis, the benefit is of greater or less duration according to the degree of connective-tissue proliferation; instillation of the solution after the use of the cautery diminishes the inflammatory reaction and the quantity of mucus. In suppuration of the sinuses, the use of the drug changes the character of the secretions, which, from purulent, become mucous. Good results were obtained by its employment in ozena, pharyngitis, laryngitis, tuberculous ulcers, otitis media with perforation, lupus, laryngeal carcinoma, etc.

Internally, in daily doses of 0.4 to 0.6 Gm. (6 to 9 minims) of a 1:1000 solution in 2 per cent. sodium carbonate, the drug proved useful in cases of cancer, causing improvement in the general condition and increased appetite—an effect which the author ascribes to neutralization of the toxic products emanating from the tumor cells. S. von Stein (Praktichesky Vratch; Archives internationales de laryngologie, d'otologie et de rhinologie, July-August, 1912).

OXYGEN, INJECTION OF, INTO INTESTINES.

A report on the therapeutic effect of this procedure in gastrointestinal affections is made by the author. He employs narrow though strong tubes with an internal diameter of only 2 mm. The tube is passed by the mouth into the duodenum, and, after its lumen has been cleared by blowing into it, a steel bottle filled with oxygen and provided with a reducing valve is attached and the gas allowed to enter very slowly. By placing the ear over the stomach, gas-bubbles may be heard rising. If the head of the tube has not penetrated far enough into the duodenum, part of the gas returns into the stomach, and the operation must then be interrupted until the gas has by degrees discharged itself into the intestines. When this is not the case, 4 liters

or more may be introduced into the small intestines without causing the patient any feeling of distention. As soon as the latter appears, the introduction of gas should be discontinued, the tube withdrawn, and the patient allowed some time for repose. In the course of a few hours, or at most half a day, the gas is discharged as flatus. The author has only given injections once or twice a day, but considers it permissible to repeat them even oftener.

The object of the procedure is to inhibit the activity of intestinal bacteria, especially those of the anaërobic kind, and thereby overcome morbid processes of decomposition. The writer's experience extends, so far, only to dyspeptic conditions and catarrhs. In some cases, especially in conditions involving carbohydrate fermentation, the treatment had a surprisingly favorable influence. After a few inflations the starch bacteria disappeared from the feces. In other cases benefit did not appear until the treatment had been interrupted after a series of inflations, the slight irritation of the intestine by the oxygen having at first disguised the immediate effect. On the whole, the author considers the measure a valuable addition to therapeusis, especially since hitherto our means of disinfecting the intestines have given poor results. Adolf Schmidt (Interstate Medical Journal, July, 1912).

PASTIA'S SIGN IN SCARLET FEVER.

This sign, as described by the discoverer, consists in an intense, continuous linear exanthem localized in the skin folds of the anterior aspect of the elbow. It is of a deep-rose color, becoming darker in time, and after several days even ecchymotic. The lines vary in number from two to four usually. To this description the writer adds 2 items: (1) The sign is occasionally visible in some or all of the other flexures, as the base of the neck, wrist, axilla, groin, nates, popliteal folds. (2) The red stripes can be caused to stand out in striking contrast by exerting gentle pressure on the skin and then quickly removing it, whereupon the skin surrounding the lines will be temporarily pale and the lines seen as intensely red.

In the writer's series of 73 cases of scarlet fever the sign was uniformly present. It was simultaneous with the rash in time of appearance, and in about 80 per cent. of the cases lasted from two to three weeks after the rash disappeared. In all cases it outlasted the rash by at least three to six days.

In cases definitely not scarlet fever the sign was seen in 3 cases of hemorrhagic measles, 1 of angioneurotic edema, and 1 of dermatitis venenata. In all these, however, it was atypical, the lines being of deep rusty-brown color, with stippled edges, in the measles cases, and merely pinkish, with edema coincidently present, in the angioneurotic case.

Of cases which, in contrast to those just mentioned, might have more easily been mistaken from the symptoms for scarlet fever, 3 cases of erythematous drug eruptions, 2 of "fish rash," 2 of angioneurotic edema, 14 of erysipelas, 2 of antitoxin erythema, and 2 of diffuse acute generalized erythema, with fever and gastrointestinal disturbance, but without the usual sore throat or scarlet tongue, did not at any time show the sign.

In 6 cases of scarlet fever in which the rash was not typical, consisting more of the diffuse redness of an erythema scarlatinoides than the usual punctiform rash, the sign led to the proper diagnosis and isolation of the patients.

The reasons for accepting the sign as one of diagnostic value are summed up as follows: It is an easily identified feature of practically every case of scarlet fever; it is as well marked in the atypical as the typical cases; it persists so that though the rash may not have been observed the diagnosis can yet be made after several days; its occurrence in other diseases has only been noted in such cases as can easily be differentiated from scarlet fever; it has great prophylactic value in those cases where the history or findings or both are otherwise doubtful, especially after the rash has disappeared and where desquamation is not visible. G. H. Taubles (California State Journal of Medicine, July, 1912).

SALPINGITIS, CONSERVATIVE TREATMENT IN.

In subacute cases of salpingitis or such pus-tubes as have not reached a great size, the author advocates the use of a conservative plan of treatment the principal new feature of which is the employment of force in applying iodine to every irregularity of the uterine cavity and if possible to the tubal mucosa by way of the uterine cornua. The cervix is seized with volsellum and gently dilated. A two-ounce glass syringe with conical nozzle about two inches in length is used to apply the iodine. About an ounce of diluted tincture of iodine (25 per cent.) is drawn into the syringe, and the uterine cavity filled and distended with all the force the syringe will permit. The pressure is continued for about two minutes. By this method, if there be an intra-uterine fibroid, or any unusual irregularity, one is positively certain that it has had a thorough application of iodine.

The patient is then placed in the high pelvis position, the abdomen opened, and examination of the adnexa proceeded with. Sometimes iodine is found to have been forced through the tubes into the *cul-de-sac*. This it is always desired to do; the excess of iodine can be sponged away and a feeling of certainty had that at least one tube can be saved. If even one ovary and half a tube can be retained, it is the rule to save them. The same syringe and the same or one-half strength of the iodine tincture is now used to distend strongly the tubes with the intention of applying the iodine over the mucosa of the isthmus, if one has been unable to force the fluid into the tube from the uterus.

After the irrigation of the tubes, any method of surgically conservative treatment may be practised. If the distal extremity has been badly injured, it may be excised and a phimosis operation done, in order to leave the tube open. After the irrigation the tube will be greatly congested. It is therefore to be attached lightly to the upper border of the broad ligament to prevent its descent and adhesion near its original position in the deep pelvis. No death has followed one of these operations. There has been no greater reaction than usual, nor increased, but rather diminished, pain. Examination before discharge of the patients has shown no unusual tenderness or induration about the pelvic organs; and finally, the temperature promptly returns to normal—a test of the efficacy of the tubal sterilization. Pregnancy has occurred in 2 patients thus treated who would formerly have had both adnexa removed.

Attention is called to the importance of sterilizing the uterine cornu and the end of the tube when excised. As soon as the tube is divided, iodine is applied to the raw surface, and the same care given the two points, uterine and tubal,

as to the stump of the appendix. I. S. Stone (Virginia Medical Semi-Monthly, June 7, 1912).

SEBACEOUS ADENOMATA OF THE ORAL MUCOUS MEMBRANE.

The lesions present in this condition, first described by Fordyce, consist of small papules either of the same color as the normal tissues or, when older, yellowish white. While the affection has been claimed by various writers to be due to conditions with which it happened to be associated, such as neurotic, gastro-intestinal and skin affections (acne, eczema seborrhœicum, alopecia furfuracea, etc.), the 2 cases which the author observed showed no disturbance other than a general neurotic tendency, especially directed to extreme oral hygiene. There were lesions on the buccal mucosa, gums and fauces.

The treatment employed, which gave excellent results, consisted of ionization or cataphoresis of copper by means of an electrode fitted to the shape of the alveolar edge. The electrode was made of heavy copper wire, with its shank or neck insulated with rubber tubing. It was connected with the positive pole of a galvanic current of about 10 milliampères. Before the application cotton was wrapped around the copper terminal and moistened with a 10 per cent. solution of copper sulphate in glycerin. The negative pole was attached to a large felt pad, well moistened and placed in a flat pan on the patient's lap, upon which the two outstretched hands were rested. The positive electrode having been placed in the mouth and forced well against the gum and away from the teeth, the current was turned on to about 10 milliampères and left so for about ten minutes. After the treatment the gums appeared blue, pale and shrunken in consequence of the impregnation with copper and the peculiar action of positive galvanism.

Fulguration of a few papules on the soft palate was also practised.

The first case was not under observation long enough to determine a positive cure, but in the second, after 4 applications at three-day intervals, the mucous membrane became entirely smooth. Maximilian Stern (American Journal of Dermatology, June, 1912).

SPIROCHETE, A NEW.

A new species of mucin-producing spirochete, found in the mouths of individuals suffering from pyorrhœa alveolaris, is described by the author. For it he proposes the name *Treponema mucosum*. Morphologically the parasite is only with difficulty separated from the *T. pallidum* and *T. microdentium*, but through its biological characteristics and animal reactions it can easily be differentiated from all other spirochetes. It is not a parasite in the strict sense of the term, but exerts a certain pyogenous action where tissue has been injured by foreign substances, yet survives. The strong fetid odor of the discharge in pyorrhœa alveolaris is due, at least in part, to the presence of this organism. Hideyo Noguchi (Journal of Experimental Medicine, August 1, 1912).

STRICTURE OF ESOPHAGUS, TREATMENT OF.

Referring to the treatment of the fibrous or cicatricial forms of esophageal stricture, the author commends the regular passage of bougies as affording much comfort to the patient and enabling him to take a much larger variety of food with ease. An oval or Mackenzie bougie is best; the author has had a modification of this instrument made

which, by tapering to a point, facilitates its entrance and passage through the stricture. The largest size of bougie that can pass should be used and when passed it should be kept in position at least ten minutes. The procedure should be repeated every other day, using a larger size of bougie if possible on each occasion. When the stenosis has been overcome by the passage of the largest bougie, further regular treatment may cease, but a bougie should be passed at intervals to prevent recurrence.

Where the stenosis is increased by spasm, much help is obtained by the use of the bromides in addition. Thiosinamine was used by the author in several cases of cicatricial stenosis in conjunction with the bougies, being given hypodermically twice a week for some weeks in each case. While sometimes it did not appear to have any appreciable effect, in 6 cases it was decidedly helpful and in 1 gave, in combination with the bougies, a most satisfactory result.

Where cicatrices are of syphilitic origin, thorough mercurial inunctions are necessary.

Excision of a simple stricture situated close to the upper end of the gullet should be attempted only where the obstruction is extreme, and will only be successful where the stricture is of very limited extent. Excision of a cicatricial stricture at the cardiac orifice has been successfully performed by means of a preliminary gastrostomy. Where an obstruction is so severe as to interfere with the nutrition of the body, the operation of gastrostomy must be thought of. Walker Downie (Glasgow Medical Journal, June, 1912).

TETANUS, PHENOL INTRAVENOUSLY IN.

The author reports facts observed in regard to the safety of injecting phenol intravenously which, if not proving the efficacy of this measure in tetanus, at least show that such injections are associated with less danger of toxic effects than would ordinarily be supposed. In a series of experiments made in the expectation that intravenous injections of phenol would exert a curative effect in certain localized lesions, there were given over 300 such injections—1 daily in courses of from 5 to 15 injections for each case. The dosage, at first limited to 0.13 Gm. (2 grains) a day, was gradually increased until 1 patient had received the maximum single dose of 0.52 Gm. (8 grains) without any apparent evil effects. The majority of patients received as the maximum dose 0.4 Gm. (6 grains); the average daily dose, however, was slightly less than 0.325 Gm. (5 grains).

While the experiments did not succeed therapeutically as had been anticipated, they proved that phenol could be given in comparatively large doses over a considerable time without deleterious effects. None of the patients showed evidence of renal irritation or developed the characteristic "smoky" urine. Twenty of the injections were followed by a slight chill and a rise of temperature; but nearly all the chills followed either the first or second injection—evidently before tolerance became established. Increase of dosage on the day following the chill was possible in all cases.

In view of the fact that tetanus cases are tolerant to phenol it would seem probable that the average patient treated with phenol does not receive enough to get the full benefit. From the author's experience in one case of tetanus, in an adult male, it would seem that beginning with a dose of 0.13 to 0.195 Gm. (2 to 3 grains), 2 or 3 times during the first twenty-four hours, and rapidly increas-

ing the dose to as high as 0.325 Gm. (5 grains), 2 or 3 times daily, many apparently hopeless cases might be saved. A 1 or 2 per cent. solution of phenol, made from the crystals or from the 90 per cent. standard solution, can easily and safely be thrown into any vein of the forearm. The urine should, of course, be examined throughout the course of treatment. W. F. Bernart (New York Medical Journal, April 27, 1912).

ULCER, CHRONIC DUODENAL, DIAGNOSIS AND TREATMENT OF.

Four cardinal features of duodenal ulcer are emphasized by the author: (1) The anamnesis. This is of great importance and often by itself allows of making a positive diagnosis. Its chief feature is "hunger-pain." (2) Gastric hyperacidity, which is present in 40 per cent. of the cases. Permanent hyperacidity indicates an organic, not a functional affection. (3) Increased pyloric peristalsis, best observed by means of the X-rays after a bismuth meal. The pain usually occurs when most of the food has reached the duodenum. Delayed emptying of the stomach is rare in early duodenal ulcer. (4) Blood is usually found in the stools if the latter be examined daily for some time. Occasionally the evidence of stenosis, due to scar-tissue, may present itself in support of the diagnosis.

In the treatment of chronic duodenal ulcer, the performance of gastroenterostomy is advocated. The mortality of the operation is but 1.3 per cent.; perforation, however, has been known to occur several months after it. In the last 14 cases operated for duodenal ulcer, a diseased appendix was removed 12 times. The condition of the appendix should, therefore, always be investigated in cases coming to operation. B. G. R. Moynihan (Lancet, January 6, 1912).

VARICOSE ULCERS, TREATMENT OF.

The following procedure is advocated by the author: The affected limb is placed on an inclined plane at an angle of 45 degrees with the horizontal. The knee should not be completely extended. The ulcerated area is cleaned and covered with aseptic gauze or clean linen. Strong pressure is then exerted over the surface of the limb by the application of an elastic bandage, beginning at the toes and proceeding upward to the knee. An ischemia similar to that produced by the Esmarch bandage thus results. The bandage is, however, removed immediately after. Suitable remedial preparations are next applied to the ulcer, which is then dressed. An elastic stocking may with advantage be placed over all. The patient may stand up and walk at once after the procedure is completed.

The object of the treatment is to rid, by compression, the dilated capillaries, venules, and the lymphatic channels of accumulated fluids, and thus to permit a freer arterial blood-supply to the tissues, whence healing of the ulcerations is favored. Recent thromboses, of course, contraindicate the method, which should only be employed when all acute inflammation has disappeared. Not only were the results obtained with the procedure in the treatment of varicose ulcers very good, but the method was also used with advantage in eczema of like origin. Stephan (Medizinische Klinik, March 31, 1912).

Clinical Summary

Practical hints from articles and abstracts that have appeared in the Monthly Cyclopedia and Medical Bulletin during the current year.

Acne. TREATMENT. Vaccines useful for selected cases: (1) Cases with deep-seated pustules, occupying a large area; microorganisms abundant, staphylococcus greatly predominating. Autogenous staphylococcic vaccine most efficient, but must be administered over some months. (2) Cases with lesions indolent and superficial, chiefly inflamed comedones, with but little pustulation. Stock acne bacillus vaccine here gives good results in many instances. Administer 5 to 10 millions acne bacilli every week or ten days. (3) Cases combining the more and less severe lesions of the first and second groups. Use mixed vaccines of staphylococcus and acne bacillus. Other measures: Remove other etiological factors, such as reflex circulatory disturbance due to nervous strain in adolescence and digestive disorders. Correct constipation and regulate diet and mode of life. Locally, squeeze out comedones and wash often and vigorously with soap and water; if suppuration present, puncture or incise pustules, bathe with hot water, and dress antiseptically; disinfect skin and have garment worn next to affected part frequently changed; X-rays; radium for indurated nodules. *Morris and Dore.* Page 93

Vaccines used in about 50 cases. Some received staphylococcic vaccine alone, others autogenous vaccine, and remainder a polyvalent stock vaccine made from previous cases. Injections of 3 to 5 million acne bacilli and 150 to 250 million staphylococci given about every five days. All patients showed marked improvement, irrespective of whether stock or autogenous vaccine used. Old vaccine emulsions found to produce more rapid immunity, with less danger of local reaction or anaphylaxis than those freshly prepared. Constitutional treatment: Correction of any digestive disturbance and regulation of bowels. Locally, mild antiseptic lotion applied. *Lovejoy.* 415

Acne Rosacea. TREATMENT. Where acne indurata associated, incise papules and pustules, scarify distended nasal capillaries, and apply Bier's cup for some time to individual lesions. Have patient apply hot compresses freely to face and at night following ointment: Salicylic acid, 0.6 (gr. x); precipitated sulphur, 4.0 (℥j); white petrolatum, 30.0 (℥j). *Aronstam.* 176

Actinomycosis. TREATMENT. Vaccine made from actinomycotic pus used in 8 cases, increasing from 0.1 to 0.75 c.c. per dose. Of 4 cases of actinomycosis of jaw and neck, 3 recovered and 1 was rapidly improving. In 1 of 2 abdominal cases, drainage of a large inguinal abscess followed by vaccine treatment for two months led to recovery. In other cases, results less satisfactory. *Kinnicutt and Mixter.* 533

Adenitis, Tuberculous. TREATMENT. Röntgen rays recommended for routine use in cases that do not readily respond to medical treatment. Give ten daily irradiations, then 2 or 3 times a week. Study of proper dosage in each case necessary. Patients thus treated early can be cured without breaking down of a single gland. Where such breaking down does occur, incise, swab out cavity with equal parts of iodine and phenol, and drain. *Boggs.* 229

Alopecia Areata. TREATMENT. In children keep hair very short; not necessarily in adults. Wash entire scalp weekly with tar soap. Every day rub in following stimulating preparation: Aquæ ammoniæ, gr. lxxv (5 Gm.); olei terebinthinæ rectificati, f℥v (20 Gm.); spiritus camphoræ, f℥v (150 Gm.). Where seborrheic lesions simultaneously present, use following ointment: Balsami Peruviani, gr. xv (1 Gm.); sulphuris præcipitati, gr. xxx (2 Gm.); olei cadini, ♏lxxv (5 Gm.); olei amygdalæ expressi, f℥vj (25 Gm.); olei theobromatis, ℥iiss (10 Gm.). *Sabatié.* 534

Anal Fissure. TREATMENT. Where merely a shallow, red, linear tear: (1) At first visit, cocainize fissure and dilate sphincters gently with fingers; lightly curette any unhealthy granulations present. (2) Regulate bowels by correcting diet, nightly injections of olive oil and, if necessary, cascara or compound licorice powder. (3) Anus to be bathed night and morning with warm water, and a sterile gauze dressing smeared with calomel or boric acid ointment—or, if pain very severe, cocaine or morphine (gr. v-x to ℥j)—applied. (4) At 4- or 5- day intervals, cocainize ulcer, stretch sphincters moderately, and apply ichthyol and glycerin, 15 per cent., or balsam of Peru, 20 per cent. in castor oil, upon cotton, to remain for several hours. Tuttle recommends application of pure ichthyol to fissure 2 or 3 times a week. In many cases not amenable to above palliative treatment excision is applicable: Infiltrate under and around fissure with 0.1 per cent. cocaine, seize small fold of skin at its lower angle, and excise ulcer with tissue forceps well up into anal canal. Where but moderate hypertrophy of sphincters, especially in children and the elderly, dilatation is the method of choice; some cases recur. Where marked sphincteric spasm, incision and division of external sphincter, under local anesthesia in majority of cases, always gives excellent results. *Hill.* 345

Some obscure cases of fissure, with dull

pain beginning one or two hours after defecation and continuing sometimes whole day, found to originate in inflamed crypts of Morgagni opening high up in anal canal. Their excision necessary for cure (*v.* Hemorrhoids, Treatment). *Tuttle.* Page 537

Anemia. TREATMENT. To increase amount of iron in red cells, following suggested: Acidi citrici, 15 Gm. (3¾ drams); ferri citratis solubilis, 4 Gm. (1 dram); aquæ, 120 Gm. (30 drams). One teaspoonful with water before meals and at bedtime. *Hemenway.* 417

Anemia, Pernicious. TREATMENT. Case in a pregnant woman at term in which 4 intragluteal injections of defibrinated human blood, amounting altogether to 159 c.c., proved markedly beneficial. *Esch.* 44

Apoplexy. TREATMENT. In thrombotic apoplexy early reduction of viscosity of blood by means of citric acid gave excellent results. *Hemenway.* 417

Appendicitis, Chronic. DIAGNOSIS. Pain chiefly in right lower quadrant, if unassociated with attacks of epigastric pain and nausea, is seldom due to appendix; before diagnosing chronic appendicitis exclude every other possible condition.

TREATMENT. Appendectomy alone frequently does not cure. This is true especially of patients with chronic constipation; a long, dilated cecum, with other evidences of enteroptosis, is usually present. *Stanton.* 33

Arthritis, Gonorrheal. TREATMENT. Intra-articular injections of iodine tincture, 5 Gm. on the average, used in many cases of various types, with considerable success. Increased swelling at first, then cessation of joint effusion, disappearance of pain, and return of motion. *Hildebrand.* 37

Arthritis, Rheumatoid. TREATMENT. 1. Liberal diet, including plenty of animal food. 2. Guaiacol carbonate in cachets; dose at first from 5 to 10 grains *t. i. d.*, to be increased by 1 to 2 grains each week up to 15 or 20 grains. If given long enough (at least twelve months) this will in many cases arrest disease, diminishing size of joints and permitting of increased movements; it relieves pain markedly. 3. Potassium iodide in 10-grain doses, combined with the guaiacol, increases benefit; its depressing effect to be counteracted by tonics. 4. Thyroid preparations are of value in early cases associated with Raynaud-like symptoms and cramps in extremities. 5. Hot baths, superheated air, or electric light; douche masssage; peat baths or brine baths. 6. Passive movements and massage. 7. Bier's hyperemia, where affected joints few. 8. Fibrolysin followed by massage, where joints more or less fixed owing to fibroid thickenings. 9. Irrigations of colon, where arthritis secondary to chronic colitis. *Luff.* 112

Thyroid preparations useful in many cases of long-standing osteoarthritis and chronic infectious arthritis, probably because of damage to the thyroid gland resulting from its hyperactivity attendant upon continued toxemia. Slow pulse an indication of thyroid failure; emaciation does not preclude it. Dosage of dried thyroid substance ranges from 1½ grains (0.1 Gm.) once daily up to 5 grains (0.3 Gm.) *t. i. d.* in distinct myxedema. Avoid causing headache, diarrhea, or reduction of blood-pressure, and intermit drug from time to time. Thyroid medication necessary for remainder of life where thyroid failure thoroughly established. *Midelton.* 236

Asthma, Bronchial. TREATMENT. Importance of chronic coprostasis and intestinal autointoxication in etiology of asthma shown. Necessity of bowel regulation in the treatment emphasized. *Ebstein.* 33

Calcium chloride internally found to exert a notable prophylactic action. After administration for three or four days of a tablespoonful of 5 per cent. calcium chloride in milk every two hours, paroxysms ceased, often not to return for several months. The drug should be continued for a week. No untoward effects. *Kayser.* 416

Management of asthma in children described: A. *During Intervals.*—1. Feet and legs to be always kept warm and dry, and chest and neck properly protected. 2. Low meat diet, with plenty of vegetable proteid, generally to be ordered. Where intestinal trouble, include green vegetables and fruit juices. 3. Upon first symptom of a cold, have child put to bed, and give liquid diet, an active cathartic, and hot drinks. 4. In obstinate cases: change of climate. 5. Where simple anemia present, or history of rheumatism, give appropriate treatment. 6. Have mother give daily exercises in deep breathing, with stress on complete expiration. 7. Have elastic binder, with shoulder straps, worn around chest, to exert slight pressure and aid expiration. 8. Where catarrhal bronchitis persists after acute paroxysms, give sodium bromide in doses of 2 to 4 grains (0.13 to 0.25 Gm.) 3 times daily after meals in essence of pepsin, for several weeks. If no nervous element present, give instead syrup of hydriodic acid in doses of 10 to 20 minims (0.6 to 0.12 c.c.).

B. *In Paroxysms.*—1. Room to be warm; ventilate from adjoining room. 2. Where tympanites, give warm enema. 3. If paroxysm soon after hearty meal, give emetic. 4. Specific remedies, each relieving certain cases: Epinephrin, 3 to 5 minims (0.2 to 0.3 c.c.) of 1: 1000 solution hypodermically; morphine sulphate, $\frac{1}{30}$ grain (0.002 Gm.); chloral hydrate in 3-grain (0.2 Gm.) doses; inhalations of nascent oxygen. 5. Where cough and wheezing after paroxysm relieved, give heroine in syrup of hypophosphites; a single dose of antipyrin at bedtime; croup-kettle treatment, using 30 minims each of creosote and oil of eucalyptus to a pint of water, employed with croup tent one-half hour at a

time two or three times daily; or similar inhalations of lime water. 6. Give much general care as to diet, elimination, and covering until cough relieved. *McClanahan.* Page 479

Blepharitis. TREATMENT. Marginal blepharitis in children to be treated as follows: 1. Remove crusts 2 or 3 times daily with sodium bicarbonate solution (gr. x to f℥j) or, at first, with warm olive oil. 2. After careful washing rub into roots of lashes a stimulating mercurial ointment (gr. viij of ammoniated mercury or gr. iv of yellow oxide of mercury to ℥j of white petrolatum). 3. If much discharge, especially purulent, cutting of lashes will facilitate cleansing; in worst cases, epilate all lashes involved in pustules. 4. If lid much excoriated, paint 1 per cent. silver nitrate solution on surface daily. 5. Keep lids closed with wet carbolic dressing (1 to 80) for a few days in severe cases, removing it *t. i. d.* to cleanse lids; avoid entrance of solution into eye. 6. Keep child from reinfecting lids with fingers by use of lightly smoked, domed protecting spectacles, or in the very young by cardboard splints bandaged on flexor surface of elbows. 7. Prescribe correcting glasses if required, to remove cause of ocular hyperemia. *Lawson.* 103

Bronchitis, Acute. TREATMENT. In strong children, in second stage of diffuse acute bronchitis or in bronchopneumonia, with many râles and "choked-up" condition, following measures recommended: (1) ½ to 2 teaspoonfuls of castor oil, given within one to one and one-half hours. (2) 30 drops of ipecac and 15 minims of wine of antimony every hour until emesis occurs, not exceeding 3 doses. (3) Tincture of belladonna in 5-minim doses every four hours, gradually increased to 15 or 20 minims, and aromatic spirit of ammonia, 5 or 10 minims. (4) Every other hour, inhalations of the following: Oil of eucalyptus, 4 drams (16 c.c.); beechwood creosote, 4 drams; oil of turpentine, enough to make 4 ounces (120 c.c.). Add from 1 to 2 tablespoonfuls to 1 quart of water, which is kept boiling in room for one-half to one hour. (5) Keep diet low. (6) Combat fever and other symptoms on general principles. (7) For stimulation: Strychnine, quinine, and alcohol. *Lowenburg.* 545

Burns. TREATMENT. Dry open-air treatment of extensive burns recommended. After thorough cleansing with soap and water and gasoline (under anesthesia, if necessary), dust burn lightly with zinc stearate powder. Give morphine to relieve pain. Once daily remove all heavy crusts, wipe off exudate with dry sponges, and dust on thin coating of powder. Never allow exudate to accumulate under crust over twenty-four hours. Success of treatment lies in constant absolute exposure of the burn. *Jack.* 346

Callosities. TREATMENT. Apply 40 per cent. formaldehyde solution with brush 3 times daily for several days, or until surface becomes sensitive. Then allow parts to dry, when by soaking epidermis with warm water it can be rubbed off. Repeat process till cure effected. *Hammond.* 539

Carbuncle. TREATMENT. Use of precipitated sulphur, applied as powder into points of suppuration or ulceration or as ointment with cocoa-butter base (1 to 8), advised. Constant application of compress wet with solution of calcium creosote equally efficacious. *Kolipinski.* 463

Carcinoma. TREATMENT. Case of skin carcinoma reported in which local use of 1: 1000 epinephrin solution appeared to cause disappearance of growth. Solution either painted freely over tumor or applied in wet dressing. Tumor gradually replaced at its periphery by healthy tissue. Six years elapsed without recurrence. *Ritchie.* 480

Cellulitis. TREATMENT. In cellulitis of hand: Apply Bier bandage and treat pain with hot dressings of saline solution. If pain not relieved, reapply bandage several times; if this still ineffective, make incision or incisions into the part, apply bandage again, continue hot dressings, and have hand placed in bath of hot saline thrice daily. Give iron and arsenic, prepare and inject a vaccine, and administer an antitoxic serum, particularly in early stages. Continue Bier's bandage after cellulitis has subsided and prescribe active movements and electric stimulation of muscles. X-rays often useful to cause deep hyperemia and promote removal of inflammatory products. Massage and passive movements after all inflammation gone. *Corner.* 346

Cholelithiasis. TREATMENT. Sodium salicylate, with or without extract of belladonna, found valuable in drug treatment. Its chief influence is upon inflammatory symptoms. Best results seen in acute and chronic cholecystitis, especially with simultaneous rest in bed and application of hot compresses. In such cases, give 2 to 4 times a day a powder of sodium salicylate, 0.5 Gm. (7½ grains), and extract of belladonna, 0.01 to 0.02 Gm. (⅙ to ¼ grain), dissolved in warm water. In severe cases of biliary colic with constant pain and high fever, calomel, 0.06 Gm. (1 grain) every hour for first 3 to 5 doses, then every two hours until first typical calomel stool appears, not exceeding 8 doses a day, often gives striking results. All patients should drink in bed about an hour before breakfast 1 to 2 tumblers of hot water; also a tumbler before retiring, and smaller quantities frequently during the day. Where chronic jaundice, gastric atony or dilatation, or intestinal catarrh, rectal injections of water, especially Carlsbad sprudel at 40 to 50° C., very useful. Dietetic Treatment: At least 5 small meals a day; food to be taken minced or as purée; very cold foods and drinks to be avoided. After each biliary attack, patient should be kept in bed several days. Physical exercise, including deep-

breathing exercises, important in cases free of colic and local tenderness for some time. *Mayer.* Page 535

Cholera Infantum. TREATMENT. For vomiting: Restriction to hot water, *ad libitum;* mustard poultice (1 part to 5 or 6 of linseed meal) to epigastrium; later, teaspoonful of iced white-wine whey every twenty minutes or half-hour, which may then be taken from bottle if well borne, and even a little fresh cream added. If vomiting obstinate: Washing out stomach, $\frac{1}{12}$ grain (0.005 Gm.) of calomel every half-hour, alternated, if necessary, with draught containing $\frac{1}{6}$ minim (0.01 c.c.) of creosote and $\frac{1}{2}$ minim (0.03 c.c.) of iodine tincture in 1 dram (4 c.c.) of camphor water. To stimulate renal activity, if but little sickness present: 15 to 20 drops of nitrous ether every few hours in water. Where any sign of exhaustion: Warm mustard bath for five to ten minutes, followed by ingestion of 10 to 30 drops brandy in hot water (to be repeated until warmth of limbs restored); strychnine hypodermically, with 3 or 4 drops of ether; quiet and horizontal posture. For intestinal condition, give following every four hours to six months' child: Bismuthi subcarbonatis, gr. x (0.6 Gm.); sodii salicylatis, gr. j (0.06 Gm.); glycerini, ♏xv (1 c.c.); aquæ, q. s. ad ʒj (4 c.c.). For fever, give enemas of water at 80° F.: 5 or 10 ounces of normal saline may be used or 2 ounces given into loose tissue of back. Where case seen early, before exhaustion has set in, disorder may sometimes be arrested with small doses of morphine sulphate hypodermically: $\frac{1}{30}$ grain (0.002 Gm.) combined with 5 or 6 drops of ether, for child 1 year old; this may be repeated in an hour. Energetic stimulation should follow, and extremities be kept warm. *Eustace Smith.* 542

Chorea. TREATMENT. Ethyl carbamate (urethane) gave favorable results. *Bertling.* 490

Clavicle, Fracture of. TREATMENT. Dressing of heavy moleskin plaster devised to avoid skin irritation of zinc oxide plaster and prevent looseness of dressing requiring reapplication. Warm a piece of moleskin 4 or 5 inches wide by 18 long, loop it about humerus high up in axilla, join its ends, and insert eyelets in them for lacing. Place a second strip around healthy side of body and adapt its posterior end for lacing with humeral loop, thus drawing shoulder of injured side back. Next place piece of moleskin 7 x 10 inches over healthy shoulder as a cap, and insert eyelets in free ends anteriorly and posterior. Pass a long strip 3 inches wide around forearm of injured side close to elbow, and connect ends in front of and behind body by laces with shoulder cap on healthy side, thus providing for elevation of injured shoulder. By tightening one lacing more than other, elbow may be brought forward or back as desired. Wait till adhesive well secured to skin before tightening laces. *Collins.* 347

Colitis, Mucous. TREATMENT. Apply to abdomen at night towel soaked in magnesium sulphate solution, ½ ounce to 1 pint of water, at 75° F. Irrigate rectum with 2 gallons of same solution at 85° to 90° F. Mucus disappears, and pain and gas formation diminish. Milk diet, with fruit, especially grapes, added, also effective; 1½ quarts of milk to be taken during day and 1 pint of hot milk at bedtime; continue for ten days to two weeks. Crude tar of *Pinus palustris*, mixed with flour and ordered in No. 2 gelatin capsules, gave good results; 2 or 3 capsules one hour after meals. *Joseph.* 42

Calumba-agar, containing solid constituents of 2 c.c. of fl. ext. calumbæ in 1 Gm. of agar, found useful in colitis with mucus in stools (*cf.* Constipation). *Einhorn.* 231

Conjunctivitis, Gonorrheal. TREATMENT. Fifteen severe cases treated by local application of steam, to kill gonococci. As soon as eyelids can be everted—iced compresses having been applied—conjunctival sac is syringed with potassium permanganate solution, dried with gauze, and treated with steam, neighboring skin being protected with linen or wet gauze. Where chemosis marked, ocular conjunctiva is also steamed, care being taken to avoid cornea. Ten patients with corneas uninvolved rapidly and completely recovered, discharge early ceasing; in the 5 other cases conjunctivitis was cured, together with, in 1 instance, cornea. Steam treatment considered superior to silver nitrate. *Goldzieher.* 419

Constipation. TREATMENT. Hormonal, 20 c.c. injected intravenously or intramuscularly, found effective in constipation with general atony and in postoperative paresis. *Hoxie.* 170

Medicated agars considered useful. Phenolphthalein-agar, containing 0.03 Gm. of phenolphthalein in 1 Gm. of agar, and rhubarb-agar, containing 1 c.c. of fl. ext. rhei in 1 Gm. of agar, recommended. Prepared by dissolving remedy in boiling agar water solution, thoroughly mixing, evaporating to the original dry agar volume, and grinding up into flakes. Dose, 1 teaspoonful twice daily in water after meals. *Einhorn.* 231

Constipation with Diarrhea. Found in gouty patients, after abdominal and rectal operations, in pulmonary tuberculosis, in achylia gastrica, and in hypochlorhydria with gastrointestinal atony.

TREATMENT. A few (3 to 5) 2- to 5- grain doses of calomel, followed by magnesium sulphate, or sodium sulphate, or a laxative water; in other cases, castor oil in ½- to 1-dram doses 2 or 3 times daily, continued for a month. Ichthyol valuable in cases with much fermentation. Physical treatment with oil or oil-emulsion enemas, hot baths with massage, or hot wet packs changed every 15 to 30

minutes. Rest in bed. Gastric lavage. Well-prepared food. Strong, black coffee with plenty of sugar often useful; also good beer or cream; bread spread with butter and honey; stewed or dried fruit (latter soaked in water); cheese; agar-agar, etc. Modest exercise alternating with rest; salt baths, sitz baths; sensible wearing apparel; correctly fitted corset. *Bernheim.* Page 69

Convulsions, Infantile. TREATMENT. Ethyl carbamate (urethane) found effective in infantile convulsions due to gastrointestinal or brain disturbances, as well as in nervous excitement and pain due to injuries or disease. Dosages 0.5 to 1 Gm. (7½ to 15 grains) in infants less than 1 year old; 2 Gm. (30 grains) in those 1 to 2 years old. May be easily given either by mouth or rectum. No untoward effects ever noted. *Bertling.* 490

Corneal Opacity. TREATMENT. "Pressure inunction" of 30 grains (2 Gm.) of calomel in 1 ounce (32 Gm.) of petrolatum advised. After free application of ointment to closed eyelids and in conjunctival sac, pad of absorbent cotton is placed over it and 3 or 4 turns of elastic flannel bandage then applied rather tightly. This is employed for two to three hours daily. Treatment to be persisted in for some months. Ointment may be strengthened or weakened according to tolerance. *Egerson.* 484

Corneal Ulceration. TREATMENT. Large doses of pneumococcus serum brought about prompt cure in 70 per cent. of cases of pneumococcic corneal ulceration. *Gebb.* 426

Coryza, Acute. Aromatic spirit of ammonia and sweet spirit of niter recommended as best agents to "abort" a cold. *Beverley Robinson.* 47

Mixed stock vaccine composed of various strains of pneumococcus, 40,000,000; streptococcus, 30,000,000, and staphylococcus, 150,000,000, recommended in colds. Marked improvement usually apparent twelve to twenty-four hours after first inoculation. Repeat dose on second day, then, in prolonged cases, at three- to six- day intervals. Severe complications following colds prevented by vaccine treatment. In cases where catarrhal condition persists between acute attacks, *M. catarrhalis*, 100,000,000, should be substituted for staphylococcus in the vaccine. In some cases, dose has to be doubled. Inoculations made at four- to seven- day intervals for several months. *Sherman.* 291

Diabetes Mellitus. TREATMENT. Sodium perborate, applied as a powder, usually twice daily, brought about rapid healing in 3 cases of diabetic gangrenous ulcers. *Herzfeld.* 167

Artificial milk, prepared as follows, advised in diabetes: 1 broken raw egg; 2 teaspoonfuls of malt extract; 4 teaspoonfuls of olive oil. Beat up in bowl for five minutes; add gradually while stirring 1 pint of drinking water; season with salt; in hot weather add crushed ice. Where patient constipated, has hemorrhoids, is obese, or has hepatic congestion, following purgative combination is valuable: Sodium phosphate and sulphate, of each, ʒiv; dissolve with shaking in quart of cold water. Dose, 1 wineglassful in a tumbler of cold water fifteen or twenty minutes before breakfast or supper. Somewhat milder, more pleasant, and gently antacid is the following: Sodium chloride, ʒiij; sodium bicarbonate, ʒiv; sodium sulphate, ʒiiiss; sodium phosphate, ʒiv. *Kolipinski.* 463

Diarrhea, Infantile. TREATMENT. Soy flour useful in summer diarrhea and some forms of intestinal indigestion; given in form of dilute gruel with or without addition of barley flour and later condensed milk or cows' milk. One to 2 level tablespoonfuls of soy flour to the quart suffice at first; later increased to 4 spoonfuls. Soy-bean, barley, and condensed-milk mixtures useful where, cows' milk disagreeing, there is difficulty in finding food sufficiently nutritious for child. Orange juice advisable from time to time to prevent tendency to scurvy. *Ruhräh.* 52

Following combination recommended in the more severe forms of infantile diarrhea: Magnesii sulphatis, ʒj-ij (4.0-8.0 Gm.); mucilaginis acaciæ, fʒss (15 c.c.); phenylis salicylatis, gr. v-x (0.3-0.6 Gm.); glycerini, fʒiij (12 c.c.); aquæ chloroformi, q. s. ad fʒiij (90 c.c.). Give 1 teaspoonful every one, two or three hours, sleeping or waking, vomiting or not. Add glycerin when urine concentrated, or give a little sweet spirit of niter separately. Where the salol causes nausea and vomiting, omit it. Take character of stools as guide to frequency of administration: If blood in them does not diminish increase number of doses. Feed child with barley water and white of egg beaten up with an equal amount of water, or better, soda water. In serious cases peptonoids may be added though they sometimes disagree. Place pinch of pepsin scales on tongue after food. *Ellis.* 349

In summer diarrhea: 1. Enforce rest, preferably in open air. 2. For stimulation: Tincture of strophanthus, with or without brandy. 3. For sedation: Morphine and atropine. 4. For subnormal temperature: Hot baths (105° to 110° F.) lasting three to five minutes, repeated every half to one hour, as required. 5. For cold extremities: Local hot mustard bath for a few minutes, followed by application of hot bottles. 6. For hyperpyrexia: Wet sheet every half to one hour with water at 85° F. 7. In extreme cases: Rectal injection of hot coffee, brandy, or camphor, not repeated more than once; hot saline solution very slowly per rectum, after excessive peristalsis controlled. *Kerr.* 548

Diphtheria. TREATMENT. Case in which, after a cure with antitoxin, throat cultures showed abundant diphtheria bacilli three weeks after start of disease. Repeated

applications to the throat of a dilute culture of *Staphylococcus pyogenes aureus*, made by inoculating 8 c.c. of bouillon with a loopful of a fresh agar growth of the coccus, led to disappearance of diphtheria organisms from throat, thus preventing the child from being a "diphtheria carrier." General condition markedly improved. No untoward effects. *Page.* Page 166

Dysentery, Amebic. TREATMENT. Hypodermic injections of emetine hydrobromide gave excellent results. Dose, 1/6 to 1/3 and even 1/2 grain (0.01 to 0.03 Gm.). No vomiting produced where ipecacuanha by mouth had done so. No ill effects. Drug can thus be given even where administration of ipecac by mouth impracticable. *Rogers.* 539

Eclampsia, Puerperal. TREATMENT. Citric acid found of great value in cases of threatened eclampsia, with marked edema and albuminuria. Following combination advised: Acidi citrici, 30 Gm. (7½ drams); liquoris sodii phosphatis comp., 80 Gm. (2½ ounces); water, 40 Gm. (10 drams); 1 dram in a full glass of water every three hours; later, twenty minutes before each meal and at bedtime. *Hemenway.* 417

Eczema. TREATMENT. Alcohol useful as antiparasitic and to relieve itching. Apply 90 per cent. alcohol twice daily to and around lesions before carrying out other local measures. Good results even in rebellious cases. Applicable in all forms of eczema except those with abundant watery discharge. Continue long after affection overcome, to prevent recurrence. *Monatsh. f. pr. Dermat.* 96

Local treatment with heated air employed in 35 cases of eczema in infants, with good results. Applications made once daily for five to ten minutes; affected region then covered with olive oil. Strict dietetic measures also to be enforced. *Perlmann.* 167

Venesection followed by injection of salt solution gave good results in certain cases of chronic eczema with itching in which other treatment, including X-rays, had failed. (V. Pruritus, Treatment.) *Simon.* 365

Eczema rubrum of lower extremities to be treated thus: Restrict intake of meats and sweets, interdict alcohol, cause bowels to move daily, and advise fresh air and at least eight hours' sleep. Locally, remove surgically any varices present, if situated above eczematous area. Then use rubber bandage. First apply ordinary lint around leg, with woolly side covered thickly with a salve and placed over diseased area. Then put on thin rubber bandage, about 3 inches wide and 5 yards long, from toes to knee, overlapping one-third of width, without reversing and leaving heel free. Maintain an even degree of pressure. At night remove bandage and dressing. Wash former in dilute phenol (3j-Oj) and draw through dry towel. Wash leg with weak phenol, dry with absorbent cotton, and apply an astringent cooling lotion twice at fifteen-minute intervals. Dress leg and reapply rubber bandage in morning. *Bechet.* 418

Enterocolitis in Infants. TREATMENT. Pure cultures of *B. bulgaricus* used with marked benefit, all cases except the most advanced being cured. After preliminary dose or two of castor oil, liquid cultures given in doses of ½ or 1 teaspoonful every three or six hours, in a little water with milk-sugar. Diet for first one or two days: Whey from pure milk, diluted according to age; later, add milk in increasing amount, and for older babies barley or other cereal water. Milk used must be free of preservative, otherwise lactic bacilli inhibited. Where purity of milk not certainly known, give barley water with lime water and milk-sugar, and later add condensed milk. In breast-fed infants, milk usually continued and cultures given between feedings. *Harrington.* 351

Epididymitis, Gonorrheal. TREATMENT. Where preliminary pain at external abdominal ring (vasitis), put patient to bed and support scrotum by strip of adhesive stretched over anterior surfaces of thighs. For established epididymitis, support scrotum in same way, and apply to it following ointment: Mentholis, gr. xv (1 Gm.); ung. belladonnæ, gr. xx (1.3 Gm.); ung. Credé, gr. xxx (1.3 Gm.); ichthyolis, ʒj (4 Gm.); petrolati, q. s. ad ℥j (32 Gm.). If swelling of epididymis does not quickly resolve, strap testicle, as follows: Envelop affected half of scrotum in a square of gauze. Press testicle into bottom of scrotum with thumb and index finger and bind a strip of adhesive above organ, holding it down. Then pass other strips, starting at the first one, around under testicle and up the opposite side until organ is covered. Finally, secure with another transverse strip over the first. Support with suspensory. Renew strapping every other day. *Bethune.* 228

Epilepsy. TREATMENT. (1) Secure bowel movements once or twice daily. (2) Have patient drink water freely. (3) Tepid sponge bathing or brief immersion baths followed by gentle rubbing. (4) Mild exercise in open air. (5) Mixed diet, consisting of vegetables and milk in liberal amount, and also white meats; starchy foods in limited quantity; normal amount of fats. Correct digestive difficulties. (6) Bromides to be used early in disease and in sufficient amount to control seizures. (7) Sodium chloride withdrawal found an aid to bromides, though prohibition of salt should not be so radical as to cause anorexia and loss of weight. (8) Combination of sodium glycerophosphate with bromides proves beneficial. (9) Thyroid extract valuable in epileptic children with arrest of development, as well as, occasionally, in other cases; to be given persistently, in small doses; after a time, it will be found bromides can be reduced or even for a while suspended. (10) Trial of pituitrin in epilepsy justifiable. (11) Symptoms preliminary to seizures, such

as headache, depression, etc., indicate the prophylactic use of a saline purge, diminution of food, and increased bromide dosage. *Dercum.* Page 292

Operation justifiable: (*a*) In traumatic epilepsy with external evidence of injury; (*b*) *do.*, without evidence of injury when nature of attacks or symptoms immediately following injury indicates seat of lesion; (*c*) in Jacksonian epilepsy; (*d*) in general epilepsy where suggestion of a focal lesion may be found before or after attacks in some disturbance of motion, sensation, or reflexes. Gratifying results may be anticipated after operation in 10 to 25 per cent. of cases. *Frazier.* 293

Epistaxis. TREATMENT. Sodium perborate used with success to arrest hemorrhage in epistaxis and after adenoid operations or tonsillotomies. *Herzfeld.* 167

Erysipelas. TREATMENT. Solution of 20 drops of phenol in 25 Gm. (6 drams) of pure neutral glycerin recommended. It is painted over affected area and surrounding skin, but must not come in contact with mucous membranes. *Lodi.* 98

Solution of aluminum acetate recommended for local use in facial erysipelas (*v.* Furuncle). *Stansbury.* 227

Paint involved area in mild cases every hour with preparation of 15 minims (1 c.c.) of phenol and 1 ounce (30 c.c.) of turpentine oil. Treat severe, widespread cases with dressings soaked in mercury bichloride, or better, absolute alcohol, applied twice daily or oftener. Internally give 4 drams (15 c.c.) of camphor water three times daily, and by enema 15 grains (1 Gm.) of collargol twice daily. *Van Velzen.* 348

Esophageal Carcinoma. TREATMENT. Small amounts of hydrogen peroxide solution of 1 to 2 per cent. strength, sipped at intervals of an hour, facilitate descent of food, even in late cases where rectal feeding has been resorted to. *Liebermeister.* 98

Furuncle. TREATMENT. Seen early, a superficial furuncle may be aborted by inserting pointed matchstick, dipped in phenol, deeply into its center; if lesion deep, inject several drops of liquefied phenol at base of lesion. For a furuncle seen late in first stage: Scratch off central vesicle and apply a Bier cup. Dress with sterile gauze wrung from normal saline solution with 1 per cent. sodium citrate, after inserting a bit of rubber dam in opening if there be tension. Protect surrounding skin from citrate with ointment, and over citrate gauze apply waxed paper or oiled silk, covered by compress and bandage. Cupping and dressing may be repeated every four hours until slough loose, when latter is removed with small forceps. Apply citrate only three days. Also give citrate internally, 15 grains (1 Gm.) *t. i. d.* after meals. Where bluish, flabby granulations: Strap edges of wound with adhesive strips, dry granulations, mop with iodine tr., and dust with Bier's powdered silver nitrate. Snip off exuberant granulations. To promote epithelial regeneration, use 8 per cent. scarlet red ointment or amidoazotoluol. Prevent autoinoculation by shaving skin around furuncle and disinfecting with 70 per cent. alcohol, tincture of iodine with benzine, diluted liquor formaldehydi, or aluminum acetate solution. Repeat local disinfection with benzine at each dressing. Where furuncle first seen in stage of softening, incise and drain; latter may be assisted with a Bier cup. For very large lesions or in furuncles of face, inject 3 per cent. novocaine under base, wait five minutes, and remove core from tumor with small curette. Where supposed boils become carbuncles, excise the whole area, controlling bleeding with cautery and compresses, and apply pure liquefied phenol. For recurring furunculosis: Bacterin therapy with killed staphylococci; initial dose, 100 million bacteria, increased by weekly doses up to 1 billion. Yeast also useful. *Shilton.* 99

Solution of aluminum acetate recommended for local use. Made with aluminum sulphate and acetic acid, of each, 300 Gm.; calcium carbonate, 130 Gm.; distilled water, 1000 c.c. For use, dilute with distilled water, 1 to 7 or 10, and apply to parts on several thicknesses of gauze, covered with rubber tissue or oiled silk, and a loose bandage. Addition of ¼ volume of alcohol or glycerin to solution avoids wrinkling and whitening effect on skin. *Stansbury.* 227

Venesection followed by injection of salt solution gave much benefit in furunculosis. (V. Pruritus, Treatment.) *Simon.* 365

Gastric Dilatation. DIAGNOSIS. Vomiting, abdominal pain, distention, constipation (occasionally diarrhea), collapse, splashing sounds, and peristaltic movement over stomach, appearing suddenly in the course of pneumonia, should at once suggest acute gastric dilatation.

TREATMENT. 1. Introduce stomach tube and practise lavage as often as distention occurs, even in cases with collapse. 2. Turn patient on right side or face. 3. Interdict food and drink by mouth. 4. Strychnine and eserine hypodermically apparently useful in some cases. *Fussell.* 107

Gastric Neuroses. TREATMENT. Condition nearly always associated with gastric atony and vertical "fish-hook" stomach. 1. Relief from pain (due to hyperacidity) obtained by recumbent position on right side or knee-chest posture for several minutes at short intervals after meals. 2. Peristalsis assisted by massage or having patient clasp left knee and make strong intermittent pressure of thigh against abdomen while lying halfway between prone and lateral position. 3. Helpful suggestion. 4. Abundant nourishment in small quantities at short intervals. 5. Attention to any existing anemia. Ra-

tional non-surgical treatment effective in majority of cases. *Greene.* 174

Fresh pineapple juice found useful to relieve anorexia. *Floersheim.* Page 233

Gastric Ulcer. DIAGNOSIS. Rice, milk, potatoes, and prunes cause positive reaction in benzidine test for occult blood in stomach contents, and hence must be excluded from diet before test is made. *Floersheim.* 105

Watermelon pulp found to cause positive reaction in guaiac-turpentine test for occult blood in feces. *Voorhold.* 106

Gastritis. TREATMENT. In gastric catarrh with much mucus, citric acid often gives quick relief. Withhold carbohydrates from dietary where amylaceous dyspepsia coexists. In acute gastritis give sodium or potassium citrate and larger amounts of water. *Hemenway.* 417

Gonorrhea, Acute. TREATMENT. Method causing arrest of suppuration in three to five days described. Inject 5 to 15 c.c. (¼ to 4 drams) of 0.25 per cent. protargol solution into urethra every half-hour in daytime and every hour at night. To be retained two to ten minutes, during which time urethra is gently massaged from behind forward. Increase strength of solution gradually. Patient should ingest large amount of fluid, in order to be able to urinate before each injection. Continue injections, given as often as possible, two or three weeks after cessation of pus. Then alternate protargol with lead acetate and zinc sulphate, of each, 0.3 Gm. (2 grains) in 200 Gm. (4⅔ ounces) of water. *Kuhn.* 37

Necessity of early treatment emphasized. Inject slowly into urethra 1½ drams (6 c.c.) of 1:6 solution of argyrol, and have it retained for five minutes. Patient should then stay as long as possible without urinating. Physician is to give 2 injections daily, morning and evening, while in interval patient makes 2 injections of a 1:25 solution. Patients thus early treated cured in from two to five days. Continue strong injections until urethra dry and redness gone. Patient may then keep on injecting weak solution. *Minet.* 419

For young girls in whom speculum can be used semiweekly treatment, once with 25 per cent. silver nitrate applied to cervix and 10 per cent. to the vagina, followed by application of petrolatum, and once by 25 per cent. paste of iodoform in glycerin, gives best results. For little girls and virgins, local cleanliness and gonococcus vaccine best. In all cases with joint complications, vaccine of great value. *Morrow and Bridgman.* 540

Gonorrheal Cervicitis and Endometritis. TREATMENT. I. Acute cases: 1. Confinement to bed. 2. Keep emunctories active. 3. Limit diet. 4. Cleanse vagina frequently with large amounts of hot saline solution or hot water containing boric acid or a weak iodine solution. Use irrigator with nozzle projecting a straight forcible stream, and pinch mucous membrane of introitus around nozzle, to flush cavity satisfactorily. Intrauterine measures and pelvic operation intervention contraindicated. II. Subacute cases: 1. Soften and dilate cervix with Goelet's uterine electrodes and galvanic current. 2. Flush uterine cavity with hot iodine solution, 1 dram (4 c.c.) of the tincture to a quart of water, or silver nitrate, 1:5000. 3. As condition improves, substitute daily intrauterine injections of iodized phenol (equal parts of iodine tincture and phenol) or 1 per cent. silver nitrate. Use syringe with long pliable nozzle, with its tip wrapped with cotton; inject fluid into cotton and withdraw syringe. Insert iodine-glycerin tampon (1 dram to 4 ounces), which patient is to remove next morning. Remove cotton within uterus at next visit. III. Chronic cases: 1. Puncture, evacuate, and sterilize diseased Nabothian glands. 2. Touch opened glands and erosions about os with pure iodine tincture. 3. Intrauterine irrigations and injections as above, three times weekly. 4. Curettage of uterus, thoroughly scraping internal os and cervical canal, followed by swabbing with iodine tincture and appropriate after-treatment. *Dannreuther.* 100

Gout. TREATMENT. Radium emanations used in 400 cases of gout and chronic arthritis. Patient in closed radium room for 24 to 36 sittings of two hours each. Injections of soluble radium salts near involved joints given in addition; also superheated air, electric light, and brine baths. Absolute rest in bed an adjuvant. Out of 50 cases in which blood was examined before and after treatment, uric acid disappeared in 37 instances, synchronously with marked amelioration. Cases in children particularly benefited, but cases of senile tuberculous and syphilitic arthritis and cases of very long standing, with marked joint changes, not suited for radium treatment. Low purin diet should also be tried for a few weeks or months; if ineffective, replace it by simple mixed diet, with as much of green vegetables and fruit as possible. *Gudzent.* 95

Combination of sodium citrate with salicylate recommended for gouty conditions (*v.* Rheumatism, Chronic). *Hemenway.* 417

Hay Fever. TREATMENT. Calcium creosote solution diluted with 8 to 10 parts of water recommended; throat and nasal fossæ to be sprayed every hour or two for two or three days. Potassium iodide, 5 grains *t. i. d.*, effective in hay asthma; arsenic may be added with advantage. *Kolipinski.* 77

Hemophilia. TREATMENT. Bleeding from wound in a hemophilic boy, previously uninfluenced by any remedial agent, checked by allowing blood from finger of a normal individual to drop on the wound. A clot formed immediately. *Sayer.* 168

Hemorrhoids. TREATMENT. Use of following preparations recommended: (*a*)

Pulveris gallæ, zinci oxidi, ana 3j (4); hydrargyri chloridi mitis, 3ss (2); bismuthi subnitratis, 3j (4); cocainæ hydrochloridi, gr. v (0.3); unguenti aquæ rosæ, 3j (30). (*b*) Pulveris gallæ, zinci oxidi, ana gr. v (0.3); morphinæ sulphatis, gr. ¼ (0.015); cocainæ hydrochloridi, gr. j (0.06); atropinæ sulphatis, gr. 1/60 (0.001); olei theobromatis, gr. xxv (1.6); ft. suppos. In external piles ointment is smeared within and around anus, and protected with cotton partially inserted therein; used three times daily. In internal piles, suppositories used, once or twice daily. Anus to be kept clean and constipation avoided. Inject 4 to 6 ounces of cold water in rectum several times daily. *Robinson.* 481

Inflammation of crypts of Morgagni or anal valves due to swelling of veins in rectal columns and lodging of fecal matter in crypts, is probably cause of "itching piles." Where small fissure exists between 2 piles it is nearly always connected with crypts, which must be laid open before complete cure possible. Only permanently successful procedure for cryptitis is to pass flexible bent probe with smooth, round head into depths of crypt and excise latter around it, through a Humphries speculum. Stretching of sphincter to be done only after crypts excised. Lay small strip of iodoform gauze into each tract left by excision and hold it in place by Lynch tube for forty-eight hours. Leave gauze until granulation well established, then induce its removal by gentle laxative. Dress parts with ointment of ichthyol, 5 per cent.; argyrol, 15 per cent., and anesthesin, 10 per cent. *Tuttle.*
Page 537

Hepatic Affections. TREATMENT. Combination of sodium salicylate and sodium benzoate found useful for cholagogue and "flushing-out" effects in various disorders, especially suppurative angiocholitis, cholecystitis, and lithiasis. Sodium salicylate induces flow of concentrated bile; sodium benzoate, of dilute bile. Relative amounts of two salts to be varied according to indications. Formula suggested: Sodium benzoate, 0.75 Gm. (12 grains); sodium salicylate, 0.5 Gm. (8 grains); sodium borate, 0.25 Gm. (4 grains); rhubarb, 0.3 Gm. (5 grains); to be taken *t. i. d. Polain-Cartier.* 38

Hepatic Congestion. TREATMENT. Where due to heart disease: Venesection or cupping; drastic or saline cathartics. Patient to take only boiled water for six to twenty-four hours, then milk diluted with water, and finally milk alone, 1½ gradually increased to 2½ liters daily. Start digitalis simultaneously; continue its diuretic action with theobromine, 3 cachets of 0.5 Gm. (7½ grains) each daily. To improve hepatic function: Copious intestinal irrigations with cold boiled water, alkalies, saline purgatives, cholagogues in small doses, and tub baths, followed by general massage. Where liver sclerosed owing to cardiac trouble, alcohol and dietetic excesses to be forbidden. Ferments and intestinal antiseptics may be of great service. When cardiac weakness appears, digitalis may be replaced in these cases by following pill, to be taken 3 times daily: Extracti ergotæ, pulveris scillæ, of each, gr. iss (0.1 Gm.); hydrarg. chlor. mit., gr. ¾ (0.05 Gm.); pulveris digitalis, gr. ⅜ (0.025 Gm.). In simple hepatic hyperemia in an adult: Venesection, purgatives, hot iron. In true hepatic cirrhosis: Iodine and calomel, latter in doses of 1/6 to ⅓ grain (0.01 to 0.02 Gm.) every morning, together with hepatic substance. *Vires.* 540

Hernia, Inguinal. TREATMENT. In infants use truss; to be kept applied continuously. After two years, if hernia still persists, urge radical cure, if possible. *Campbell.* 159

Latent hernial sac frequently to be found on side opposite that operated. Should be searched for in all children and young adults, and, if present, ligated, thus insuring patient against possibility of a second operation. *Roughton.* 541

Hodgkin's Disease. TREATMENT. Röntgen rays cause prompt reduction of glands. Whenever recurrence is manifest, renew the treatment. External tumors can thus be controlled a long time, or until patients succumb to deep involvement. *Boggs.* 229

Hyperchlorhydria. TREATMENT. Rhubarb and soda, or rhubarb and magnesia, either in mistura rhei et sodæ or in Gregory's powder, useful in gastric disorders with fermentation or hyperacidity. *Beverley Robinson.* 47

Salt-poor diet, chiefly of albumins and fats, recommended. Cream to be taken, but not milk. Meat to be used only after softened by hanging and well pounded. Whenever heartburn appears, 1 or 2 raw eggs to be swallowed; soft-boiled eggs not so well borne. Light, salt-poor cheese especially recommendable. Foods made from flour to be restricted and taken only with eggs and much unsalted butter and rich cream. Vegetables to be scalded two or three times with water and latter then thoroughly poured off. Combat hyperacidity due to vagus excitation with pills of belladonna and valerian. For the overexcited mucosa give some astringent in tepid water half an hour before meals. To the very nervous administer also 45 to 60 grains (3 to 4 Gm.) of a bromide, for four to six weeks. Four or five meals to be taken daily, unless gastric atony or emaciation necessitate shorter intervals. *Ehrmann.* 481

Hyperidrosis. TREATMENT. For sweating feet: Bathe them every night with 1 per cent. potassium permanganate solution and dry thoroughly. Next morning dust on following powder: Potass. permang., 5ij (8.0); alumin. pulv., gr. xx (1.25); talc. pulv., 3j (32.0); zinci carbonat. et oxid., of each, 3ss (16.0); or else, have patient wear white stockings previously soaked in saturated boric acid solution. Where bromidrosis, use dilute formalin. For sweating in axillæ:

Bathe with weak vinegar, and apply following powder on gauze pad: Acid. salicyl., gr. xx (1.25); amyli pulv., 3ij (8.0); alumin. pulv., q. s. ad 3iss (48.0); or else, use following lotion: Betanaphtholis, 3j (4.0); glycerini, 3ij (8.0); alcoholis, q. s. ad 3iiss (80.0). Where persistent bromidrosis, short exposures to X-rays may be effective. *Meachen.* Page 177

Hyperthyroidism. DIAGNOSIS. Elevation of temperature found an early symptom in many cases, especially mild ones. When, in absence of acute or other tangible disease, there have been loss of weight and augmented nitrogen and phosphoric acid excretion, and when, after administration of a thyroid or iodine preparation, there occur the characteristic psychoneurotic and cardiac symptoms of excessive thyroid activity, elevation of temperature is a thyrotoxic phenomenon. *Stern.* 39

Hypothyroidism. DIAGNOSIS. Blood showing mild leucocytosis and relative lymphocytosis with eosinophilia from 3 per cent. up is highly suggestive of thyroid insufficiency. *Collins and Kaplan.* 40

Ileus. TREATMENT. Enterostomy performed in 20 cases in terminal stages of ileus, with result that only 16.6 per cent. died from the condition. Should preferably be done before intestinal paralysis is complete and abdominal muscles stretched beyond limit of tonicity. Lower ileum is seat of election for opening in gut; colon should not be used. Tube not less than 5/16 in. inside diameter should be used for drainage. *Taylor.* 397

Inertia, Uterine. TREATMENT. In secondary inertia and where pains ineffective owing to hydramnios or twin pregnancy, intramuscular injection of pituitary extract is indicated. May also be employed in febrile states. Where complications expected after birth, inject pituitary extract a few minutes before end of second stage. Where used in first stage, time to inject is when os is a little less than size of palm in primiparæ, and when it will just admit 2 fingers in multiparæ. *Jaeger.* 234

Intertrigo. TREATMENT. In infants acute enterocolitis, frequently the cause of intertrigo through the irritating discharges, should be overcome by dieting: stop milk; give rice, arrowroot, or albumin water, with plenty of pure water to allay thirst. Internally, give sodium phosphate, 5 to 10 grains (0.3 to 0.6 Gm.) every morning for two or three days, usually followed by castor oil, 1 dram (4.0 c.c.). Locally, soak parts with oatmeal water. Give an oatmeal bath, by soaking bag filled with oatmeal in tub filled with boiling water for one-half hour, then allowing to cool to 100° F. and giving child hip bath. Then use following salve: Calamin and zinc oxide, of each, 3 parts; petrolatum, 50 parts. Dust parts with cornstarch or wheat flour. Use salve three times daily, previously cleansing parts with olive oil, if necessary. *Fischer.* 170

Intestinal Indigestion. TREATMENT. Pure cultures of *B. bulgaricus* used with benefit in cases of indigestion of putrefactive type with odorous stools and indicanuria. Dosage, for adults, 3 to 4 teaspoonfuls of liquid culture 2 or 3 times daily, preferably in sweetened water before meals. Antiseptics internally to be avoided during treatment. Diet: Meat and eggs in limited amount only, or at first prohibited entirely; give buttermilk and milk containing no preservative; fruits and sweets freely; fats, cream, butter, bacon and gelatin; vegetables, if starch digestion good; bread and cereals. *Harrington.* 351

Intestinal Paresis, Postoperative. TREATMENT. Pituitary extract used in 21 laparotomy cases. Dose, 16 minims (1 c.c.), commenced six hours after operation and repeated every few hours until 18 doses given. All patients passed flatus freely within a few hours, and were free of pain and distention. In all cases but 2, bowel action was obtained after a simple enema. Three intramuscular injections of 1 c.c. each recommended during first twenty-four hours as routine practice in laparotomy cases. Pulse rate remains much lower than usual. *Bidwell.* 44

Ivy Poisoning. TREATMENT. Lead water and laudanum, with addition of ½ to 1 dram (2 to 4 c.c.) of sodium hyposulphite to the ounce, recommended as local application. Fluidextract of grindelia robusta, diluted with 10 to 15 parts of water and applied frequently or constantly with gauze, also often acts well. Where solutions applied on gauze, parts should be well cleansed and dressings changed daily. Internal use of small doses of tincture of rhus toxicodendron brings about immunity to poison ivy. *Attix.* 543

Jaundice, Catarrhal. TREATMENT. Cold injections of water or normal saline solution recommended, favoring biliary flow by promoting peristalsis. *Polain-Cartier.* 38

Laryngitis, Acute. TREATMENT. Freshly powdered cubeb, taken frequently and in moderate amount dry on tongue, found of service in acute throat disorders. *Beverley Robinson.* 47

Lichen Planus. TREATMENT. Tar emulsion baths found effective in a severe case: Oil of cade, 50 Gm. (1½ ounces); black soap, 25 Gm. (6 drams); water, 50 Gm. To be added to bath taken daily. *Balzer, Godlewski, and Condat.* 485

Lupus. TREATMENT. Pfannenstiel's method found useful in lupus of nasal mucous membranes. Give patient 45 grains (3 Gm.) of sodium iodide daily, divided into 6 doses. Every morning cleanse nasal cavity of crusts with nasal douche containing sodium chloride and boric acid, and, after drying, insert tampon of sterile gauze, in contact with affected parts. Have patient keep tampon constantly

moist with 2 per cent. hydrogen peroxide solution. Free iodine is thus liberated from iodide excreted by nasal mucosa, exerting its effect on lesions. In early cases ulcerations heal in one to three weeks. *Sequeira.*
Page 102

Mastoiditis. DIAGNOSIS. A small mastoid process with thick outer cortex and small antrum is especially subject to "atypical" mastoiditis; condition escaping detection until serious complications appear. Suspicious symptoms in such cases are: 1. Discharge from ear more profuse than one would readily expect from middle ear alone and continuing profuse for two or three weeks. 2. Increased swelling of posterosuperior wall of external auditory canal. X-ray found useful for early diagnosis in a number of cases. *Crockett.* 41

Blurring of outline of tip of mastoid elicited by grasping both mastoids anteriorly and posteriorly between fingers and noting difference of definiteness of outline on the healthy and abnormal sides found valuable as corroborative evidence in early, doubtful cases of mastoiditis. Swelling from otitis externa may be confusing, but this is usually reduced in a few days by local treatment and ice-bag, while blurring of mastoid remains. *Alderton.* 104

Melæna Neonatorum. ETIOLOGY. Condition ascribed to oral infection; "mouth-cleansing" after birth considered inadvisable, giving chance for introduction of organisms. TREATMENT. Desperate case saved by injections of human blood-serum, doses of 20, 18, 10, 6, 18, 14, and 6 c.c. being given in four days. Method of securing serum was ordinary venesection (after careful skin cleansing), serum being allowed to separate spontaneously from clot in ¼-liter flasks. Injections made with antitoxin syringe anywhere from scapulæ to buttocks. *Nicholson.* 172

Myxedema. DIAGNOSIS. Where, in presence of puffy eyelids or dyspnea, physical examination does not yield evidence of renal or heart lesions, the existence of incipient or incomplete myxedema should be suspected. Therapeutic test—thyroid preparations in moderate dosage for a month—will confirm or disprove existence of hypothyroidism. *Butler.* 348

Nævus Pigmentosus. TREATMENT. Repeated application of formaldehyde recommended (*v.* Verruca, Treatment). *Hammond.* 539

Nasal Accessory Sinuses, Inflammation of. TREATMENT. In acute cases: 1. Calomel followed by a saline, then by diaphoresis with hot lemonade. 2. Liquid diet. 3. Acetylsalicylic acid or hexamethylenamine, to reduce suppuration. 4. Atropine sometimes valuable, but to be used with care. 5. Locally, application with cotton swab of 2 per cent. cocaine solution, followed by epinephrin, then by 4 per cent. antipyrin. Spray of epinephrin in alkaline medium every two or three hours. 6. After thorough contraction of mucosæ, clear opening of sinus or sinuses with swab and irrigate nose gently with warm saline solution containing a little sodium bicarbonate. 7. Oily spray of menthol and camphor. 8. Mild suction with exhaust bulb or Brawley apparatus. 9. Leucodescent lamp to relieve discomfort. 10. Hot applications. 11. Irrigation of sinuses (difficult, sometimes impossible without removal of bone). If condition unrelieved in a few days, operation. In subacute cases, same treatment + autovaccines. Latter also useful to hasten recovery in acute cases. *Miller.* 173

Nephritis. TREATMENT. Mild forms of nephritis probably often recover after renal decapsulation (doubtless some of these would recover under medical measures). In a case of acute interstitial nephritis with miliary abscess formation, patient recovered apparently because of decapsulation and scarification of cortex. Patients with high-grade parenchymatous change may be given a respite for six months to several years, but their symptoms will probably eventually recur; in such cases, a secondary decapsulation is to be considered. In parenchymatous nephritis with marked general edema, relief is generally so transient as to make operation of questionable value. *Babcock.* 257

Following diet useful in protecting patient with early chronic interstitial nephritis from ultimate failure of circulatory balance: Breakfast: Large helpings of bulky fruits; an egg and 2 thin slices of bacon; a slice of bread, or an equivalent of toast, muffin, waffles, cereal, etc.; tea, cocoa, coffee, milk, water, or carbonated water. Luncheon: Large helping of some vegetable salad, with pickles, olives, or other relish; a moderate amount of cheese; breads and liquids as at breakfast. Dinner: Vegetable, milk, or cream soup; piece of meat, fowl, fish, or game, about 2 x 2 x ½ inch in size; gravies in moderation; freely of all kinds of succulent vegetables, though moderately of potato, rice and other starchy foods; breads and liquids as at breakfast; a simple dessert. Total of food taken should be smallest which will maintain nutrition at highest level, as judged by body weight and sense of well-being. Where tendency to increase of weight, reduce amount of bread, potato and other starchy foods, and *vice versâ*. Upon rising and two and one-half or three hours after meals, a small glass of water or carbonated water should be taken. Moderate physical exercise desirable; if impossible, replace it by massage. Take body weight, measure all liquids taken and voided, and examine urine, weekly. Once in four weeks, give 2 freshly made 5-grain pills of mercurial mass every night for three days, followed the first time by ½ ounce of castor oil in morning, and the other two mornings by a saline. *Wells.* 354

Orchitis. TREATMENT. Case of unilateral orchitis, apparently originating by metastasis

from primary foci in inflamed tonsils, in which hexamethylenamine in doses of 15 grains (1 Gm.) every six hours, later reduced to 5 grains (0.33 Gm.), brought about rapid improvement. *Prouty.* Page 544

Osteomalacia. TREATMENT. Daily doses of 3 to 5 dessertspoonfuls of a 0.01 per cent. solution of phosphorus in codliver oil, with rest in bed and baths as adjuvants, used with success in 6 cases of senile osteomalacia. *Reich.* 356

Otitis Media, Acute. TREATMENT. Relation of acute pharyngitis, nasal-sinus, middle-ear, and mastoid inflammations to an "active autotoxic state" of the system emphasized. Calomel in $\frac{1}{10}$-grain (0.006 Gm.) doses, frequently repeated up to 1 or $1\frac{1}{2}$ grains, found valuable to stimulate defensive powers of body and shorten convalescence. Used in combination with local treatment. Calomel, followed by castor oil or salines, given every other day. *Shaw.* 42

Pain, Local. TREATMENT. Combination of menthol and methyl salicylate in hydrated wool-fat, covered with cotton and gauze bandage, recommended to relieve local pain where skin is intact. *Beverley Robinson.* 47

Paralysis, General. TREATMENT. Salvarsan administered intravenously in a case of paresis in maniacal stage, with marked improvement. *Holland.* 73

Two cases reported in which salvarsan was of distinct benefit. *Daland.* 298

Pharyngitis. TREATMENT. Where swollen lateral bands alone present, paint them with zinc chloride solution (gr. xv-f℥j) or touch with galvanocautery. "Nervous cough" is often kept up by swelling of the lateral bands; these should then be painted gently with deliquescent trichloracetic acid, followed by brushing with sodium carbonate. *Grant.* 363

Placenta Prævia. TREATMENT. Absolute quiet, rupture of membranes when required, and irrigation with hot water recommended. Water should be at 45° to 48° C. (113° to 118° F.), and at least 7 or 8 liters of it should be used. Repeat irrigation if necessary to check hemorrhage. Seventy cases thus treated without a death. Infection from tampon and mishaps in version or introduction of bag thereby avoided. When hemorrhage arrested, spontaneous expulsion of fetus to be patiently awaited. Instrumental dilatation contraindicated. *De Bovis.* 44

Pleuritis. DIAGNOSIS. X-ray studies showed that location of fluid in chest in serofibrinous pleurisy depends upon the position assumed most constantly by patient during acute stage, and that exudates of this type are but slightly, if at all, mobile. These facts are of assistance in differentiation of serofibrinous from other varieties of effusion. *Engelbach and Carman.* 106

Pneumonia, Lobar. TREATMENT. Creosote inhalations and moderate bloodletting, especially with leeches, recommended. *Beverley Robinson.* 47

Stock pneumobacterins, in doses of 25 to 600 millions, used in 20 cases, with 15 per cent. mortality; 30 other similar cases, under usual methods of treatment, showed 40 per cent. mortality. In some of the cases, strikingly prompt benefit followed use of bacterins; in others results were less marked or *nil.* Results seemed more definite with the larger doses. Dosage can be adjusted according to clinical phenomena; where malaise, headache, chilliness, or definite rigors, with rise of temperature, follow an injection, it is unwise to increase dose. *Robertson and Illman.* 107

Intramuscular injections of quinine and urea hydrochloride used in 192 cases of lobar and lobular pneumonia; mortality 12 per cent. Initial dose, 15 to 25 grains (1 to 1.6 Gm.), repeated in three or four hours, and perhaps once or twice again in first twenty-four hours. Same plan on second day of treatment, and on third, if necessary. Smaller doses, 5 to 10 grains, then sometimes continued by mouth. Results: Temperature and pulse rate gradually fall, respiration more rapidly; termination by lysis in five to twelve days. Procedure in injecting: Paint skin with iodine tincture, fill syringe with 50 per cent. solution of the quinine salt in sterile water; inject deeply into a muscle, emptying syringe thoroughly; withdraw needle, and seal puncture with collodion; no local ill results. Additional treatment: The usual hygienic and drug measures; saline infusion; sodium bicarbonate or ammonium compounds in sufficient amount to keep urine alkaline; tincture of ferric chloride when quinine withdrawn. *Solis-Cohen.* 235

In cases with blood-pressure below 110 mm. Hg and other symptoms of vasomotor paresis present (pulse soft, cyanosis not prominent, extremities warm), epinephrin in 10-minim (0.6 c.c.) doses of 1: 1000 solution should be given intramuscularly, even before signs of pulmonary edema appear. If latter develops suddenly, give 15-minim (1 c.c.) doses every twenty minutes for 4 to 6 doses or until the symptoms are controlled; repeat series of injections later if required. In pulmonary edema accompanying dilatation of heart due to toxic degeneration of muscle or added to the myocarditis of old persons, however, epinephrin will accentuate the dilatation, and is contraindicated. These cases are differentiated by fact that blood-pressure is high,—125 to 170 mm.,—cyanosis is marked from the start, extremities are cold, first heart-sound loses muscular quality, and pulse is small, of high tension, and irregular in frequency and size; physical examination may reveal cardiac enlargement, with descent of apex. *Brown.* 297

Camphor-oil injections used in 37 cases, with but 1 death. Ten c.c. of a 30 per cent. camphorated oil, injected hypodermically to

each 100 pounds of body weight every eight to twelve hours, are harmless and materially assist in overcoming toxemia, especially if begun early. Sterilize oil in boiling-water bath, draw into sterile syringe, and inject, after iodine disinfection of skin, into outer aspect of thigh. In lean persons 20 c.c. may be injected in 1 place; in fat patients, in 2 places. *Scibert.* Page 545

Pneumoperitoneum. DIAGNOSIS. In presence of free gas in peritoneal cavity, there occurs a concentric diminution of area of hepatic dullness, *i.e.*, dullness disappears at same time from upper border of liver downward and from lower border of liver upward. In tympanites, on the other hand, liver dullness disappears from below upward only. This distinction found useful in early diagnosis of perforation in typhoid fever. *Berg.* 108

Pneumothorax. DIAGNOSIS. Positive coin test, displacement of heart, and, in right-sided cases, displacement of liver are the most important diagnostic signs, occurring in about 90 per cent. of cases. Succussion splash and metallic tinkle occur in 30 or 40 per cent. *Cruice.* 46

Poisoning by Acids. TREATMENT. Case of sulphuric acid poisoning reported in which, when patient comatose, intravenous injection of 300 c.c. of a 5 per cent. solution of sodium carbonate caused immediate return of consciousness. Ultimate recovery. *Marchand.* 357

Poliomyelitis, Acute. ETIOLOGY. Poliomyelitis is propagated by dust. Nasopharynx is probably point of entry. *Neustaedter and Thro.* 46

DIAGNOSIS. Lumbar puncture shown to be valuable in distinguishing poliomyelitis of meningeal type from acute cerebrospinal meningitis. Negativity of cerebrospinal fluid in poliomyelitis diagnostic; in meningitis, fluid shows marked turbidity, coarse clot formation, great excess of albumin, copious deposit of polymorphonuclear cells, and meningococci. *Forbes.* 46

Importance of thoroughly cleaning out alimentary canal at earliest period of disease emphasized; copious enemata high up found useful. Retention of urine may also require treatment with warm baths, hot compresses to abdomen, or, ultimately, catheterization. *Bogardus.* 175

TREATMENT. Following procedure carried out in 5 cases with good results: Thoroughly cleanse alimentary canal, bandage limb or limbs lightly with cotton to keep them warm, give stimulating liquid diet and strychnine in minute doses, and apply Bier cups intermittently to both sides of spine and directly over posterior process from sacrum to cervical region, for one hour daily. Continue this regularly until muscular soreness has disappeared and voluntary motion in affected muscles begins to return. Where treatment can be begun a day or two after initial attack, soreness diminishes about fourth day and motion returns slightly about tenth or twelfth day. Then start massage and gradually allow general diet. *McIlhenny.* 533

Postnasal Catarrh in Children. TREATMENT. If condition acute, paint throat several times daily with boroglyceride, or, in older children, spray with a ¼ grain to the ounce solution of tartrated antimony while patient inspires deeply. Later, add an equal amount of glycerite of tannin to the boroglyceride. Where painting throat resisted, instill into nostril several times daily, while child lies back with head on pillow, a solution of 5 to 10 grains of resorcin to the ounce of saline solution, 10 grains of boric acid to the ounce of water, or 15 grains of sodium bicarbonate to the ounce. As redness of pharynx fades, apply pure glycerite of tannin or a paint of 12 grains of iodine and 15 grains of potassium iodide to the ounce of glycerin, with 5 drops of oil of cinnamon or peppermint. After all redness gone, use an astringent iron paint of 1 dram of the stronger iron perchloride to an ounce of glycerin. For anorexia: an iron tonic; stay in country or at seaside. Keep child well protected from cold for some time after. *Eustace Smith.* 34

Postoperative Shock. PROPHYLAXIS. Subcutaneous injections of epinephrin, 0.0004 to 0.0006 Gm., given regularly, to all cases operated, at start of anesthesia. Regularizes narcosis and lessens or eliminates operative shock. Where a patient remains asthenic for a day after operation further injections of 0.0004 Gm. may be given with advantage. *Delbet, Herrenschmidt, and Beauvy.* 534

Pruritus. TREATMENT. Venesection to the extent of 100 or 200 c.c., followed by injection of 300 to 700 c.c. of 0.9 per cent. sterile salt solution through same cannula, found to relieve itching at once, with subsequent cure or marked improvement. Procedure repeated 3 to 6 or more times, at intervals of five or six days. No untoward effects. *Simon.* 365

Pruritus Ani. TREATMENT. Idiopathic pruritus ani believed to be caused by streptococcic infection of skin. In 8 cases treated with autogenous vaccines made from organisms on skin, results were excellent, itching disappearing or growing less after 4 or 5 injections. *Murray.* 359

Burrowing of crypts of Morgagni beneath anal mucocutaneous membrane found responsible for many cases of pruritus ani where local remedies and dietary failed. After excision of these tracts, condition disappeared (*v.* Hemorrhoids, Treatment). *Tuttle.* 537

Psoriasis. TREATMENT. Put patient in warm bath (98° F.), to which, if skin tender and irritated, chamomile and bran or washing soda are added. Rub skin slightly once or twice with green soap, wash off, and remove

scales. Next wash with 1: 1000 mercury bichloride, then tar skin well with: Olei rusci, olei fagi pinguis (fresh), of each, 20.0 (3v); alcoholis diluti, 10.0 (3iiss). Patient then remains in bath twenty to thirty minutes, after which tar is washed off and affected parts treated with: Acidi salicylici, 1.0 (gr. xvj); sulphuris præcipitati, 4.0 (3j); zinci oxidi, amyli tritici, of each 1.0 (gr. xvj); petrolati, 25.0 (3vj). Dust talcum powder thickly over parts. Two days later, apply a 10 per cent. ointment of pyrogallol in hydrated wool-fat, followed by talcum, and after two days more, a 25 per cent. ointment of chrysarobin. For psoriasis of face, use following formula: Unguenti hydrargyri ammoniati, pyrogallolis, of each, 1.0 (gr. xvj); unguenti zinci benzoatis, q. s. ad 25.0 (3vj). For psoriasis of scalp, wash with 1: 1000 mercury bichloride. Internally, give phenol and arsenic trioxide in separate pills, to be continued for a longer time than local treatment. Hygiene: Plenty of fresh air and rest. Bland diet, avoiding meat and alcohol, at least for a time. *Bernheim.* Page 327

Following preparation recommended for addition to baths given for removal of scales: Oil of cade, 50 Gm. (1½ ounces); black soap, 25 Gm. (6 drams); water, 50 Gm. Yolk of egg and a little fluidextract of quillaja may be added. Patient is to soak in bath and rub patches for ten or fifteen minutes. Chrysarobin, 2 Gm. (30 grains), or pyrogallol, 1 or 2 Gm., may also be used in the preparation. Patient is to apply petrolatum to patches in daytime, then take bath, and reapply petrolatum at night. For tar folliculitis, use methylene blue. *Balzer, Godlewski, and Condat.* 485

Psychoses. TREATMENT. Seven cases—4 in children—reported in which pronounced mental disturbances were shown due to dental impaction, alveolar abscess, or other conditions affecting teeth, and cure or great improvement resulted upon remedying these states. Importance of X-ray examination of teeth and jaws in psychoses emphasized. *Upson.* 129

Puerperal Sepsis. TREATMENT. Intravenous injections of mercury bichloride used in 11 cases, with 6 recoveries. Measure considered worthy of trial in severe cases. Twenty drops of a 1 per cent. solution injected once or twice daily; 1 to 4 grains of bichloride used during the treatment. Precautions necessary: 1. Teeth to be carefully cleansed. 2. Salines to be omitted during treatment. *Stowe.* 110

Outdoor treatment of severe puerperal infections found usually to bring about rapid improvement and to lower mortality by nearly 20 per cent. Sunlight as important as air. Patients kept out of doors on a wheel bed, to be moved in again when necessary. General condition strikingly well maintained in the prolonged pyrexias. Other measures: Iron, arsenic, strychnine, alcohol, fluids copiously by mouth, saline enteroclysis in severe cases, alcohol and cold sponge baths for pyrexia, hot or cold applications for abdominal pain and distention. Curettage contraindicated, increasing mortality 10 per cent.; local treatment to be limited to a single intrauterine douche of sterile salt solution. *Yaung and Williams.* 236

Pulmonary Abscess. TREATMENT. Inversion of patient found effective for evacuation of pus in a case of pulmonary and hepatic abscess; rapid recovery. Postural method suggested for trial in lung abscess and bronchiectasis before resort to surgery. *McKechnie.* 486

Quinsy. TREATMENT. Early probing advocated, in order to drain pus accumulation at its inception. With aid of reflected light and tongue depressor, tonsillar fossæ, especially upper ones, are entered in turn by means of a tonsil slitter or probe. Where bottom appears soft, rounded point of instrument is pushed deeper into tissues, capsule pierced, and peritonsillar space entered. The small amount of pus thus evacuated gives a sense of relief and infection stops. This can be carried out in about 8 out of 10 cases. It is practically painless and bloodless. *Schuster.* 360

Raynaud's Disease. TREATMENT. Apply liquid ichthyol in 10 per cent. strength locally. Internally, large doses of potassium iodide are very beneficial. Rest in bed and hot applications of some antiseptic solution to the affected members are useful. Where gangrene, amputation may be all that is necessary, but healing is tedious. *Beck.* 298

Renal Traumatism. TREATMENT. After crushing injuries of renal substance spontaneous repair is usual. Operation should not be done unless there is evidence of intraperitoneal leakage, progressive hemorrhage, urinary extravasation, or sepsis. *Babcock.* 257

Rheumatism, Acute Articular. TREATMENT. *Streptococcus pyogenes* vaccine used in 6 cases, in 4 of which no salicylates were given, with good results. Temperature quickly fell in every case, pain ceased, and inflammatory phenomena disappeared. Stock vaccine from several strains of streptococcus used in these cases, but author thinks it preferable to employ a mixed streptococcus and staphylococcus (*aureus* and *albus*) vaccine. *Wolverton.* 48

Rheumatism, Chronic. TREATMENT. In rheumatic conditions associated with anemia and in sore throat of rheumatic origin, following mixture recommended: Dissolve 1 dram (4 Gm.) of sodium salicylate in 2 ounces (60 c.c.) of water. Add liquor ferri perchloridi, plus an ounce of water, giving dark purple mixture. Then add 1 dram of potassium bicarbonate dissolved in 1 ounce of water, and fill up bottle to 8 ounces with water. *Drinkwater.* 51

Lime-poor diet found useful in certain forms of subacute and chronic arthritis, especially

deforming arthritis, cases with joint pains following acute polyarthritis, and cases of chronic spinal ankylosis. Cases should be selected by test-diet, to make sure of calcium retention, as other patients will not respond to the treatment. Articles of food allowed in lime-poor diet: White or aleuronat bread, rice, tapioca, wheat flakes, sago, tomatoes, mushrooms, white of egg, meat bouillon, beef, calves' liver, tongue, sweets, vegetable fats, light beer, carbonated waters, port. Distilled water to be used in preparation of food. After six or eight weeks restrictions may be somewhat relaxed. *Hirschberg.* Page 110

Combination of sodium citrate with salicylate recommended: Sodii citratis, 30 Gm. (7½ drams); sodii salicylatis, 20 Gm. (5 drams); aquæ, 120 Gm. (30 drams); one teaspoonful in a cup of hot water half-hour before each meal and at bedtime. *Hemenway.* 417

Rhinitis, Chronic. TREATMENT. To clear and moisten nasal passage, following formula useful: Sodium chloride and salicylate, of each, 45 grains (3 Gm.); sodium borate and potassium chlorate, of each, 96 grains (6.5 Gm.); glycerin, 1 dram (4 c.c.); water, 6 ounces (200 c.c.). Two teaspoonfuls of this are to be added to 1 ounce of warm water and used to spray or sniff up nostrils occasionally. When fetor present: Phenol, 1 grain (0.06 Gm.); sodium bicarbonate, 4 grains (0.24 Gm.); warm water, 1 ounce (32 c.c.). To dissolve away purulent discharges: Sodium sulphate, 20 grains (1.3 Gm.) to the ounce. Where recurrent catarrh due to intranasal irregularities, remove latter. If surgery inadequate, use vaccines, and if sinusitis present wash out sinus daily for a week with a warm antiseptic solution. Where discharge accumulates in nasopharynx, use mixture of menthol, 10 grains (0.6 Gm.), and spirits of wine, 1 dram (4 c.c.) to 1 ounce (30 c.c.) of water, 1 dram of which is placed in ¾ pint of nearly boiling water and the vapor inhaled through mouth and exhaled through nose for ten minutes every two hours. Discharge may be thinned and partially removed by sniffing up nostrils a warm antiseptic alkaline lotion, after which an ointment of menthol, 4 grains (0.25 Gm.), and eucalyptol, 20 minims (1.25 c.c.), to 1 ounce (32 Gm.) of yellow petrolatum may be used. *Stuart-Low.* 422

Rhus Poisoning. TREATMENT. Aluminum acetate solution recommended for local application (*v.* Furuncle). *Stansbury.* 227

Sciatica. TREATMENT. Where acute attack, in spite of the usual measures, persists longer than ten to fourteen days, sulphur baths or hot carbon dioxide baths (102.7° to 104° F., and lasting twenty minutes) should be employed, or heat applied in other ways. If ineffective, author counsels treatment by injections of saline solution and air: 1. Injection of 800 to 1000 c.c. of air, filtered through cotton, under skin on outer aspect of leg. 2. Injection of 60 to 80 c.c. of 0.8 per cent. salt solution, with 0.01 to 0.02 Gm. of novocaine added, just below sacrosciatic notch, as close to nerve as possible. 3. Injection of 10 to 20 c.c. of salt solution, with 0.01 Gm. of novocaine into epidural space of inferior lumbar region, needle being passed in and up through coccygeal notch; preliminary anesthesia of course of injection with novocaine. 4. Where very severe pain and contractures of lumbar muscles, injection of 10 to 15 c.c. of salt solution between third and fourth lumbar vertebræ into epidural space. Injections to be repeated at intervals of three or four days, substituting 1 to 1.2 per cent. for 0.8 per cent. saline. Two to five series of injections cure obstinate cases. *Sicard.* 114

Semilunar Cartilage of Knee, Dislocation of. TREATMENT. Mold piece of sole leather 4 inches long and 1¾ inches wide to inner side of knee, first soaking it in water and cutting edges smooth. Fasten over the displaced cartilage by adhesive straps—2 vertical, 1 horizontal, and 1 oblique—and cover with fairly firm bandage. Patient may walk as usual, notwithstanding soreness. Bandage renewed every ten days. After 3 such treatments condition is well, an aseptic adhesive inflammation having taken place, and only a bandage need be used. *Chandler.* 171

Sinuses. TREATMENT. Following paste used with success in treating a discharging sinus in a breast cancer, after Beck's paste had failed: Bismuth subnitrate, 30 Gm. (1 ounce); petrolatum, 60 Gm. (2 ounces); white wax and paraffin, of each, 5 Gm. (80 grains), and iodine tincture, 2 Gm. (30 minims). The tincture is added after other ingredients mixed. Paste to be stirred when used. Where large amount to be employed, diminish proportion of iodine. *Green.* 177

Small-pox. TREATMENT. Mixture of 10 per cent. iodine and 90 per cent. glycerin painted over pustules 2 or 3 times daily in 85 cases; caused drying of lesions and arrest of tissue destruction, and prevented pock-marks. Pustules on face may be opened with sterile instrument and touched with iodine tincture. Desquamation frequently almost completed in four to six days. All cases recovered. *Rockhill.* 115

Splanchnoptosis. TREATMENT. Simple method of supporting viscera described: Shave hair from lower abdomen; place strip of zinc oxide adhesive plaster 2 to 2½ inches wide by 5 to 6 inches long across extreme lower abdomen; attach to each end of it a bandage of same width to reach around body above iliac crest and be fastened behind; have bandage well padded with cotton. Avoid skin irritation by plaster by removing it occasionally, cleansing skin, and using a dusting powder. Improve general and local muscular tone by means of massage, electricity, treatment of gastrointestinal tract, correct living, and suitable diet. *McCaskey.* 238

Syphilis. TREATMENT. Salvarsan given

intravenously in 10 pregnant women in doses of 0.5 Gm. and subcutaneously in 8 newborn infants in doses of 0.03 Gm. Injections in women in dose mentioned found to be not without danger to fetus, pronounced weakening in heart-sounds being noted in days succeeding injection in one-half the cases. Child of a mother given first injection of salvarsan five and one-half months before parturition was born healthy; a child born seventy-two days after salvarsan injection was syphilitic. In the newborn, salvarsan was found to act promptly on pemphigus and to cause disappearance of spirochetæ from lesions; it is capable of producing prompt and lasting recovery from hydrocephalus of syphilitic origin. Smaller doses now advocated by author: 0.2 Gm. for pregnant women, repeated in six days; 0.01 for newborn infants, repeated twice or thrice at six-day intervals. *Bar.* Page 49

Sodium cacodylate used in 43 cases, each patient receiving 14 to 16 injections on successive days. Fresh solution of the drug, 1 in 15 of distilled water prepared daily. Injections at first subcutaneous, then intramuscular. Dosage: 3 grains daily, increased as results noted up to 5 or 6 grains. No untoward effects except, rarely, slight muscular pains or spasm. Conclusion reached: Drug useful in syphilis, giving results not unlike those of salvarsan, though less rapid. Best effects in early syphilis, on initial lesion, maculoroseolar or papular eruption, mucous patches and condylomata; also has an excellent alterative effect. Place patient on mercury immediately after course of cacodylate injections ended. *Spivak.* 362

Best results are obtained by use of salvarsan followed by mercury. Give repeated doses of former, to prevent relapses, making 3 or 4 injections at intervals of about eight weeks, unless relapse occurs earlier, when an injection should be given at once. Exception to this rule should be made where Wassermann is repeatedly negative after first or second injection of salvarsan, and all symptoms have disappeared. Salvarsan does not produce strains of spirochetes resistant to itself, as formerly supposed. *Anders.* 385

Rectal administration of salvarsan considered useful as substitute for intravenous or subcutaneous methods in cachectic cases or those with cardiovascular lesions. Suppositories of cocoa butter containing 0.1 Gm. of drug used. Introduced in late afternoon, suppository is absorbed by next morning. Slight local irritation for two or three hours induced; may be prevented by adding a little cocaine to suppository. To adults, 0.6 Gm. altogether is given, 1 suppository being used every week for six weeks. *Bagrow.* 488

Tabes Dorsalis. TREATMENT. Salvarsan administered intravenously in 4 cases, along with hydrotherapeutic measures, with striking improvement. *Holland.* 73

Two cases reported, under treatment for over a year, in which lancinating pains were controlled, muscular inco-ordination improved, and Wassermann reaction became negative. *Daland.* 298

Tachycardia, Paroxysmal. TREATMENT. Attack of tachycardia in a woman relieved as follows: Patient being seated, physician's right hand was placed flat over heart, left hand on back, and patient directed to take deep breath, close glottis, and fix strongly walls of chest. Chest walls were then squeezed with some force, attempting to exert pressure on upper part of heart. Immediate relief and fall of pulse rate from 220 to 110. *Rich.* 233

Tapeworm. DIAGNOSIS. Deep pétrissage of abdomen recommended as aid to diagnosis of tapeworm. Series of circular movements executed by hand in direction of large intestine with enough energy to cause thorough kneading of abdominal contents. Procedure harmless and reveals worms sometimes when purgatives have failed. Three or four fifteen-minute applications of deep pétrissage generally required. Administration of purgatives in cases where contraindicated thus avoided. *Cyriax.* 426

Tetanus. TREATMENT. Phenol injections used in 5 consecutive cases, all recovering; 2 other cases treated with antitoxin died. Ten minims of 10 per cent. solution of pure phenol in sterile water, diluted to 30 or 40 minims, injected deep into muscles, at first every three hours, later at longer intervals as improvement appeared. Injections made into buttocks, deltoids, or pectorals. No untoward results. Urine, however, should be watched for smoky color, as a precaution. Severity of convulsions always diminished by the treatment, sometimes after third or fourth dose. In fully developed cases, second dose to be given one hour after first. Original wound to be excised or cauterized, as usual, with strong solutions of phenol, silver nitrate, or nitric acid. *Kintzing.* 115

Tetany. TREATMENT. Removal of whey from food given to infants with tetany found advantageous. Suspension of curds of wheyless milk proved useful as food. Best prepared as follows: Bring milk to a boil, then cool to 107° F. Add chymogen, 1 dram to the quart, and keep at 107° for half an hour. Strain through cheesecloth and allow to drain an hour. Finally, put curds through fine-meshed sieve, and suspend in a solution of arrowroot flour (1 level tablespoonful to the quart). *Grulee.* 230

Tonsillitis, Acute. TREATMENT. Tincture of iodine applied locally in 400 cases in children, with unusually prompt cures. Also used in pharyngitis, otitis media, tonsillar and nasal diphtheria, laryngitis, stomatitis, etc. For a milder application deep down in throat or in nose, equal parts glycerin and iodine tincture is satisfactory. In acute contagious diseases applications of iodine tincture to throat are of prophylactic value, combating spread of infection. *Sill.* 171

Brushing with 10 per cent. menthol and 3 or 4 per cent. guaiacol in olive oil often has good effect. *Grant.* Page 363

Following measures advised: 1. Reduction of fluids to minimum. 2. Calomel in ⅛ to ¼ grain (0.008 to 0.016 Gm.) tablets every half-hour till 2 grains taken or bowels well moved. 3. Hot mustard foot bath (1 heaping tablespoonful to pail of hot water); wrap patient in blanket and put to bed. 4. Light diet, omitting meat. 5. Quinine bisulphate, 2 grains (0.12 Gm.), with Dover's powder, 5 to 10 grains (0.3 to 0.6 Gm.), night and morning. 6. To combat exacerbations of systemic reaction: 1 or 2 drops (0.05 or 0.1 c.c.) of pure phenol, stirred in ¼ glassful of cold water, internally 2 to 8 times daily. 7. Mild gargle and spray to cleanse throat. 8. Wipe over tonsils once every one to three days with tannic acid, 1, in glycerin, 4, or tincture of ferric chloride, 1, in glycerin, 5. 9. Throat lozenges, 6 to 8 daily, with guaiacum, 1 or 2 grains (0.06 to 0.12 Gm.), or made up with camphor and menthol, of each, $\frac{1}{10}$ grain (0.006 Gm.), and cocaine hydrochloride, $\frac{1}{32}$ grain (0.002 Gm.). 10. Cracked ice sucked to relieve thirst and lessen inflammation. 11. Ointment or hot poultice under angles of jaw for glandular swelling and pain. 12. Where marked obstruction to breathing, linear slash with guarded bistoury through bulging tonsil. *Griffith.* 550

Trachoma. TREATMENT. Subconjunctival injections of diphtheria antitoxin used in 50 patients, 30 being practically cured and 20 greatly improved. After turning lids, eyes first washed with boric acid and saline solutions, then 1 c.c. fresh antitoxin injected in each lid from within outward. Lids then returned to normal position and another cubic centimeter injected under skin and muscle of upper lid. Inflammatory reaction for thirty-six hours, then disappearance of granules. Three or four such treatments given successively. *Pachopos.* 178

Tuberculosis. TREATMENT. Tuberculin applied locally in 10 cases, comprising suppurative cervical adenitis, anal fistula, and sinuses, with early cures in previously rebellious cases. Parts first irrigated with salt solution, then tuberculin solution sprayed on, or, in sinuses, introduced with syringe and flexible cannula. Mouth of sinus sealed with collodion for several hours. Initial dose must be small; later dose is carefully increased, avoiding general reaction. Locally there is pronounced reaction at first, then stimulation of processes of repair. *Beasley.* 56

Tuberculosis, Laryngeal. TREATMENT. Yeo's continuous respirator will check cough in this condition. Preparation generally used: Creosote, 3iij (12.0); spirit of chloroform, oil of Pinus sylvestris, of each, 3iss (6.0); oil of cinnamon, oil of citronella, of each, ♏v (0.3); menthol, gr. v-x (0.3-0.6). *Grant.* 363

Tuberculosis, Pulmonary. DIAGNOSIS. Hemoptysis occurring without warning in young adults, and unassociated with further signs or symptoms of tuberculosis, is probably of tuberculous origin and should be so treated. Hemoptysis in pneumonia, bronchitis, asthma, or following trauma should lead to suspicion of an underlying tuberculous process. *Bartlett.* 101

TREATMENT. Citrate of iron hypodermically found very efficient in relieving the secondary anemia in 257 cases, 70 per cent. of which were advanced or far advanced cases. Employed routinely where reduction in hemoglobin greater than 10 per cent. Dose, 0.05 Gm. (⅚ grain), injected in buttock. Italian preparations found least irritating. Maximum benefit attained after 30 to 40 consecutive daily doses. *Bullock and Peters.* 32

Comparative study of 146 cases receiving tuberculin and 234 treated by hygienic-dietetic method alone. Conclusion reached that tuberculin is valuable in tuberculosis, especially in moderately advanced cases, and is of special value as a protection against relapse. Autogenous vaccines used in 75 other cases; temperature rapidly returned to normal, expectoration diminished, and hemorrhage was rare. *Petit.* 57

Creosote carbonate, 10 grains in capsules every three or four hours, used with satisfaction in cases of tuberculosis with sudden symptoms of pneumococcic infection (shown by malaise, moderate rise of temperature, followed by bloody sputum and preponderance of pneumococci in saliva). *F. N. Robinson.* 152

Treatment of cough discussed. Facilitate early morning cough with glass of hot water or milk with or without 1 dram of whiskey or brandy, 5 or 10 grains of sodium bicarbonate, or a little Saratoga Vichy. For irritative cough, avoid sources of irritation, such as rapid talking, laughing, smoke, etc.; control the desire to cough. Deep-breathing exercises, change of position in bed, sucking ice, sipping orange juice, demulcent lozenges. Where pharyngeal irritation, use slightly astringent lozenges: Ext. grameriæ, potassii chloratis, ana gr. xv (1); olei menth. pip., ♏j-ij (0.06-0.12); ext. glycyrrhizæ puri, 3iiss (10); ft. in trochiscos no. xxx. Steam inhalations, with 3j-ij of cpd. tr. of benzoin or oil of pine to a pitcher of hot water. Where bronchial secretions abundant: Inhalation from perforated zinc mask (Robinson's inhaler) of 10 drops of equal parts of alcohol, creosote, and chloroform. For pharyngeal irritation, also try sprays of 1 per cent. menthol or pine oil in benzoinol or albolene, or a mixture of equal parts of menthol, camphor, and eucalyptol in 100 parts of benzoinol. For night cough: Warm drink before retiring; warming the bed; cross binder, above and below shoulders and across chest and back, previously dipped in cold water (60° F.) and covered with similar dry cross binder and a flannel jacket; renew in three hours or leave

on all night. Strapping chest, where pleurisy. Sometimes counterirritation with iodine tincture or blisters over the apices or other site of irritation. For nervous cough: Bromides in 10- to 20- grain doses, chloral hydrate in 5-grain doses, or a combination of the two. Where wheezing and much secretion: Belladonna tincture, 10 to 20 minims, or atropine sulphate, gr. $\frac{1}{100}$ to $\frac{1}{50}$. Codeine, gr. $\frac{1}{12}$ at first, then $\frac{1}{8}$ or $\frac{1}{4}$ every two hours; heroine, in smaller doses; finally morphine, $\frac{1}{24}$ grain, increased if necessary. For abundant expectoration: Respiratory exercises, change in position, cross binder, and especially creosote inhalation and atropine. *Mcara.* Page 239

Typhoid Fever. DIAGNOSIS. Early recognition of perforation facilitated by observation of concentric diminution of liver dullness. (See Pneumoperitoneum.) *Berg.* 108

Careful, repeated leucocyte counts claimed to afford earliest reliable means of typhoid diagnosis for general practitioner. Characteristic leucocytic picture: 1. Leucopenia, progressive, very likely preceded by slight leucocytosis. 2. Initial moderate polynucleosis, lasting first four to eight days. 3. Progressive, marked lymphocytosis, displacing polynucleosis and lasting well into recovery. 4. Increase in large mononuclears, beginning with onset of disease. 5. Sudden, early, and complete disappearance of eosinophiles. *Hultgen.* 116

New test for typhoid fever described: With fine hypodermic needle inject a few drops of suspension of dead typhoid bacilli, made by taking 1 drop of 1000 million vaccine and mixing it thoroughly with 20 drops of sterile saline solution. Inject intradermally and as superficially as possible. Typhoid patient shows absolutely no reaction, while non-typhoid patient shows an area of well-marked redness disappearing forty-eight hours after injection. *Prendergast.* 300

TREATMENT. Ipecac used in 6 cases with good results. In every case but 1 patient became afebrile within four days. Dose in the earlier cases, 30 grains (2 Gm.) on first evening, diminished daily by 5 grains down to 10 grains (0.65 Gm.); in other cases, 10 grains morning and evening, later decreased to 10 grains once daily; drug was given in salol-coated pills, preceded by tincture of opium to prevent vomiting. *Frazier.* 103

Lumbar puncture twice performed in a case with intense, persistent headache, second puncture bringing relief. *Oddo and Monges.* 178

Inoculation with typhoid vaccine considered a valuable measure, after experience with 50 cases. Best dosage, 50 to 100 or 150 millions every third day. Notable absence of severe complications and of tendency to relapse. Stock vaccine best. *Leishman.* 534

Where cold sponge baths fail to lower temperature, cold colonic flushing often effective. Use small colon tube, inserted just through the sphincter muscle. Pass 1 to 3 pints of water at 40° to 50° F. in small quantities into colon, and allow to return through tube. Repeat every four to six hours if temperature rises and is not reduced by sponging. *Penoyer.* 551

Uncinariasis. TREATMENT. Beta-naphthol in 3 doses of 30 grains each at intervals of two hours, followed, again in two hours, by 6 drams of magnesium sulphate, found to expel 97.52 per cent. of total number of hookworms present. Thymol, in same dose, expelled 97.87 per cent., but caused serious constitutional disturbance. A 60-grain beta-naphthol treatment expelled 86 per cent. It was given as follows: Beta-naphthol, 4 drams (16); mucilage of tragacanth, 1 ounce (32); peppermint water, to make 6 ounces (192). *Nicol.* 230

Uremia. DIAGNOSIS. Depression of reflexes and positive Babinski phenomenon found valuable as a very early indication of oncoming uremia. Present in the stage of "preuremia." *Curschmann.* 48

Urethritis. DIAGNOSIS. Improved method of differentiating anterior from posterior urethritis described. Slowly inject 1 c.c. of 0.5 per cent. aqueous solution of basic fuchsin into anterior urethra and have it retained one-half to one minute, with slight massage. Allow fluid to escape and have patient urinate in 2 high glasses. If only stained shreds are present, there is no posterior urethritis; if only white, unstained shreds, infection is in posterior urethra; if both stained and unstained, process is both anterior and posterior. *Wolff.* 118

Urethritis due in about 5 per cent. of cases to *Micrococcus catarrhalis.* These cocci more rounded than gonococci; more of them extracellular; best differentiated by culture. Condition always subacute at first; symptoms mild, but rapidly intensify under frequent urethral injections. Period of incubation important: Often only one day, or else more than ten days; where three to ten days, probably gonococcic.

TREATMENT. Mild measures only. Sandalwood oil cures mild cases in week to ten days. In more severe forms, mild astringent often needed. In 1 case, weak organic silver solution found beneficial. *Ayres.* 551

Urticaria. TREATMENT. Venesection followed by injection of salt solution proved useful in some cases. (V. Pruritus, Treatment.) *Simon.* 365

Vaccination Site. TREATMENT. Picric acid applied to vaccinal lesion in 22 children, to harden tissues and prevent local infection. Four per cent. solution in 95 per cent. alcohol painted over and around vaccinal site forty-eight hours after vaccination and daily thereafter. Inflammatory reaction and constitu- with success of vaccination. *Schamberg and Kolmer.* 118

Varicose Ulcers. TREATMENT. Stimulate

granulations with silver nitrate (30 grains to the ounce), cover ulcer with sterile gauze, and apply long adhesive straps to skin on either side of lesion till skin well wrinkled. Have foot elevated on pillows till it returns to normal size. Change adhesive straps upon alternate days or oftener. Massage and attention to bowels. Linen elastic stockings, put on over white stockings to absorb perspiration, after ulcer cured. *Gills.* Page 178

Following method found effective in healing ulcers resistant to other forms of treatment: Place patient under deep anesthesia; remove all crusts surrounding ulcer; pour on tincture of green soap and sterile water, and scrub the ulcer with an ordinary stiff brush, previously thoroughly sterilized. Continue scrubbing, washing off *débris* with clean water, until base of ulcer is smooth and edges stand out clearly, red and hard. Paint ulcer and immediate vicinity with tincture of iodine, and apply wet boric or bichloride dressing. Pain generally complained of after recovery from anesthetic, but if bandage is kept moist with warm solution it soon ceases. Granulation soon sets in at many places, and repair is rapid and satisfactory. *Beck.* 300

Verruca. Treatment. Use of 40 per cent. formaldehyde recommended. To be applied to lesion every three to six hours for two or three days, by means of wooden toothpick or matchstick. Care to be taken not to touch normal skin. Growths desiccate and exfoliate in several days to a week. If dermal layer still not free from blemish, another application or two secure desired results. Where open sore produced, use healing ointment of zinc oxide or simple cerate. *Hammond.* 539

Vincent's Angina. Diagnosis. Signs distinguishing it from lacunar tonsillitis are: 1. Absence of fever. 2. Pain more localized on affected side, and is severe, lancinating. 3. General malaise and physical exhaustion very marked.

Treatment. First perform gentle curettage of the tonsillar crypt involved. Then apply 12 per cent. silver nitrate solution. *Wherry.* 58

Salvarsan used locally, first in solution, then in powder, in a severe and obstinate case; prompt recovery. *Achard and Flandin.* 118

Vomiting of Pregnancy. Treatment. 1. Magnesium carbonate, 2 drams; magnesium sulphate, 1 ounce; mint water (1:40), 1 ounce; water, to make 8 ounces; wineglassful to be taken early in the morning. Cascara given daily in small doses for two or three weeks. 2. Simple diet; evening meal to consist only of thin porridge, gruel, or arrowroot. Koumiss; champagne, ½ hour before a meal. 3. Where relief from nausea only obtained after complete evacuation, encourage latter by the sipping of warm water. 4. Absolute recumbency in severe cases. 5. Drugs: Effervescing mixtures, salicin emulsion, phenyl salicylate, compound tincture of cardamom in dram doses, antipyrin or acetanilide with sodium bromide, small chloral and potassium bromide enemata, wine of ipecac in hourly minim doses; validol found most effective drug; menthol, 1 part in 60 of water, with 30 parts of alcohol or brandy, or chloroform (3 to 6 drops on sugar or in water) sometimes useful. 6. Rectal feeding, gastric lavage, laudanum stupes on epigastrium, ether spray, blistering of cervical spine, and ice-bags exert partly psychical effect. 7. Mental therapeutics, in purely neurotic type of vomiting. 8. Massage, electricity, blisters, etc., may help. *Hall.* 119

Whitlow. Treatment. Following measures recommended in thecal whitlow: Make preliminary puncture incision to evacuate pus, apply Martin bandage above elbow or knee, and dip affected part in hot Wright's solution. Depths of wound may with advantage be irrigated with same solution at outset, through cannula. When pain alleviated—in a few minutes—remove bandage, insert sufficient rubber drainage, apply gauze saturated with Wright's solution, equalize circulation by compression pad of non-absorbent cotton, and complete dressing with roller bandage and elevation of part. Patient should at home keep dressing moist and warm with the solution (2½ teaspoonfuls of salt and 1 large teaspoonful of sodium citrate in glass of hot water) and apply rubber bandage for thirty minutes every three hours. Inject small dose of polyvalent stock pyogenic bacterins or, where septicemia present, large dose of antistaphylococcic serum. Inject weak iodine solution in lesion occasionally. Later, strive to restore function of parts by massage, passive motion, and if necessary tendon or fascia transplantation. *Skillern.* 420

Whooping-cough. Diagnosis. Edema of the eyelids, especially the lower lids, sometimes appears before the cough and may be of assistance in the diagnosis. *Thursfield.* 97

Treatment. Ethyl carbamate found valuable to prevent nervous phenomena occurring when disease has run its course. Dose, ½ to 2 Gm. (7½ to 30 grains) in children under 2 years of age. *Bertling.* 490

Wounds. Treatment. Nuclein solution found useful to ward off infection in cases of crushed and lacerated hands, burns, varicose ulcers, minor cuts, etc. *Achard and Redfield.* 105

Sodium perborate found useful as a dressing in infected wounds and acute or chronic ulcers. *Herzfeld.* 167

Solution of aluminum acetate recommended for dressing of infected wounds. Made with aluminum sulphate and acetic acid, of each, 300 Gm.; calcium carbonate, 130 Gm.; distilled water, 1000 c.c. For use, dilute with distilled water, 1 to 7 or 10. *Stansbury.* 227

Book Reviews

THE WASSERMANN REACTION, ITS TECHNICAL AND PRACTICAL APPLICATION IN THE DIAGNOSIS OF SYPHILIS. By John W. Marchildon, B.S., M.D., Assistant Professor of Bacteriology, St. Louis University Medical School. 12mo of xiv + 103 Pages, with 11 Illustrations and Colored Frontispiece. St. Louis: C. V. Mosby Company, 1912. Cloth, $1.50.

The phenomenon of the presence of the three members of a hemolytic system (bacillus, amboceptor, and complement) producing hemolysis, discovered by Bordet and Gengou in 1902, was applied to the diagnosis of a number of infectious diseases, such as typhoid, meningitis, etc., by Wassermann and Brück. Reasoning from analogy, they developed the so-called Wassermann reaction in 1906, for the diagnosis of syphilis. Since *Spirochæta pallida* cannot be cultivated like typhoid or other bacteria, Wassermann made extracts from the liver of a newborn babe, dead of syphilis, which organ contains the bacteria in large numbers. The value of this reaction if properly done is certain, and equally uncertain if improperly made. The author in this volume gives the reader complete and exact information as to the materials and the technique of the Wassermann reaction, but he emphasizes the necessity, in addition, of a certain amount of laboratory training and skill. Included in this volume is not only the Wassermann reaction in syphilis and other diseases, but also modifications suggested by Tschernogubou, Noguchi, and von Dungern. Clear and full in description, rich in detail and illustration, and printed in readable type, this book commends itself to all progressive practitioners.—C. S. W.

SURGERY OF THE BRAIN AND SPINAL CORD, Based on Personal Experiences. By Prof. Fedor Krause, Geh. Medizinalrat, Dirigierender Arzt am Augusta Hospital zu Berlin. English Adaptation by Dr. Max Thorek (Rush M. C. Univer. of Chicago); Surgeon-in-Chief, American Hospital, Chicago, Ill.; Consultant, Cook County Hospital; Ex-Professor of Surgery, Bennett Medical College (Pres. Loyola University), etc. Volume II. Large Octavo of xxviii + 539 Pages, with 94 Figures in the Text, 14 of which are Colored; 27 Colored Figures, and 4 Halftone Figures, on 15 Plates. New York: Rebman Company, 1912. Cloth, $7.00, net.

Volume II of this splendid work is devoted to the surgery of the brain. Epilepsy is the first subject considered and to it over 200 pages are devoted. After setting forth succinctly our present knowledge of the pathological physiology of this condition, with special stress on the value of faradic irritation in diagnosis, the author enters into the discussion of Jacksonian epilepsy, its etiology (including intoxications, infections, tumors, infantile cerebral paralysis, and injuries at birth), diagnosis, and the results of cortical excision as performed by himself. Following this are sections on "general genuine epilepsy," the results of operation in epilepsy, and traumatic and reflex epilepsy. The text is extremely valuable in that it is based largely on the author's individual work in brain surgery. His experience has been so extensive that all phases of the subject can be treated in full in this manner. Illustrating each particular type of disease is given the history of a case, with an account of the diagnosis and operative treatment and, in many instances, accompanying cuts or colored plates showing the exact pathological conditions found. The plates are of unusual excellence, both in definition and coloring.

The latter part of the volume—more than half—is devoted to neoplasms of the brain. All the most recent operative methods are discussed, and some of these procedures, *e.g.*, removal of tumors by suction, illustrated. Among the cases presented and depicted, in addition to those of more usual type, are "angioma venosum racemosum of the pia mater," cysticercosis at the base of the brain, fibrosarcoma of the island of Reil with two recurrences after operation, and sarcoma of the hypophysis.

The value of this translation of Prof. Krause's monumental work to the English-speaking profession is self-evident. No surgeon interested in brain pathology can afford to be without it, while neurologists will find in it much material of interest from the standpoint of diagnosis.

The General Field

Conducted by A. G. CRANDALL

Diversion for the Mentally Depressed

It is said that sheep-herders who remain at their posts for long periods lose their mental equilibrium. The sheep is not argumentative. The herder has it all his own way and becomes, in Western phrase, "locoed."

Moving backward on this line of thought one naturally reflects as to what specimen of the domestic animal would be most likely to produce an opposite effect and provide that continuous variety calculated to exercise the largest number of brain cells. The answer is easy—the great American hen.

In referring to the hen in the above language of adulation, we are following the lead of the statistician and census taker, but there is another reason why the hen should receive about all the decorations the alphabet affords, viz., the hen is the only companion of man who can be depended upon to beat him at his own game.

Man is a predatory animal and delights in craftily despoiling some other animal of his treasure. Under his devious spell the fiercest and boldest of the four-footed beasts succumb and yield up their fur coverings or bow in subjection to the yoke of servitude. So true is this that monotony is the rule in man's association with the lower animals.

The hen is the one exception. Infinite variety has been ascribed to woman, but Shakespeare was not a poultry fancier. He was a fairly good judge of blondes and seemed to have drawn the brunette with considerable accuracy. But compared with the originality of the genuine Plymouth Rock hen, the Shakespearian heroine was a marionette to be wound up just as the orchestra begun to play.

With all the rest of the animal creation at his feet, man's subjection of the hen may be better stated as his subjection *to* the hen. Just a slight change in the preposition, that's all; but it means enough money to swamp Wall Street.

A vast number of city-employed householders have journeyed to the suburbs in order that the problem of the high cost of living might be solved. All that was necessary in iridescent theory was a few domesticated feathered pets continuously clucking their satisfaction in the back yard. And well may they be satisfied.

The hen is a faker that puts the three-shell artist out of the contest from the start. The hen demands environment, entertainment, and all the delicacies of the season. She requires the first half of the brief egg-laying season for what is called molting, viz., to arrange her tail feathers so as to act properly in a breeze, and the other half to adjust her domestic affairs so as to bring off an early brood of chickens.

The hen is possessed by vanity, jealousy, maternal affection to an inordinate degree, but especially by stinginess in that little matter of laying eggs. And that is where Man, the supreme con-

queror of the lower orders of life, meets his Waterloo.

And so if the monotony of association with the woolly, idiotic sheep brings on a collapse of the mental faculties through disuse, why should not the problems associated with making a common flirtatious hen lay eggs prove a tonic of first magnitude to the aforesaid mental faculties?

An Excellent Record for 1912

Atlantic City is pointing with pride to her record for the present season in rescuing reckless bathers. Over 250 pleasure seekers who, intoxicated with the holiday spirit, struck out among dangerous currents have been brought to shore by the life guards, pumped out, and properly admonished.

Never in the history of the resort have so few cases of drowning been recorded in one season.

We understand that an effort will be made to secure special State legislation the coming winter that will give beach authorities unlimited jurisdiction over bathers, and that, hereafter, parents of venturesome young people who visit this resort can dismiss their minds from all anxiety so far as bathing is concerned. In view of the natural recklessness of some, this should certainly prove one of the most effective advertising features.

A Hard Problem

For some months there has been a great deal of one-sided discussion of the question whether or not sex hygiene should be taught in the public schools, and, more broadly, just how it should be taught to young children.

There is probably no question which has involved greater moral responsibility than this subject of vital interest ever since the first dawn of civilization. Some very competent medical authorities have been quite lukewarm on the subject, maintaining that adequate knowledge along this line imparted to young children must at best be regarded as a two-edged sword.

Just at present there seems to be a reaction, and, instead of its being all "pro," there is considerable "con" made manifest. The main argument for a radical change in policy on this subject is that, left to themselves, children become the victims of ignorance. No doubt, there are many instances of this kind, but one thing should be borne in mind, and that is, that the most reasonably complete knowledge is likely to prove ineffectual, in some instances, without the ever-necessary continuous supervision of parents.

There is no way by which the parental responsibility can be shirked without a chance for serious consequences. The old-fashioned parents who were wise enough to exercise careful supervision were usually able to acquire and retain their children's confidence.

That argument is indeed likely to be sophistical which relieves parents of the responsibilities which first rest upon them.

"Feminism"

A gentleman who has traveled much and observed much in many countries is convinced that a crisis is looming up before us because of the development of a condition which he designates as "feminism."

According to this authority, there was once a time about 1000 years ago when woman was a docile creature, accustomed to taking orders from the lords of creation and carrying them out. Alack and alas, times have changed, and,

with the exception of a small portion of Africa, the wilds of Yucatan, and the interior of Mexico, feminine docility is a lost art.

This investigator states that only about half of the graduates of woman's colleges ever marry and, of those who do marry, there is not a higher average than two children each as a result of the marriage. The logical inference, therefore, is that higher education and a gradual dying out of the race are coincident.

Another manifestation of this same feminism is the avowed intention of a large number of young women of marriageable age to absolutely abstain from matrimony, except under the most favorable circumstances. Instead of accepting an eligible offer in a docile manner, as might have been expected two centuries ago, the young woman of the present day looks with supercilious disapproval upon all offers which do not fully measure up to her ideals as regards social standing and pecuniary circumstances.

Overawed by the multiple manifestations of "feminism," mere man timidly withdraws from pursuit, and the erstwhile object of his devotion devotes her energies and enthusiasm to woman's suffrage in some one of its various forms.

This savant, having returned to this country after a sojourn of several years in another part of the world, is appalled by the militant tactics of femininity in general and is seriously alarmed for the future of his native country.

The Reptile Press

It is the French who have epigrammatically criticised the newspapers which pander as the reptile press.

When Governor Woodrow Wilson, a learned scholar, cultured, honorable gentleman, but presidential candidate, speaks with the utmost sincerity to farmers, his utterances are criticised by the opposition press in terms of ridicule and contempt. The impression which the press attempts to set forth is that Professor Wilson could not possibly be sincere in his kindly remarks to farmers whom he meets on public occasions.

When ex-President Roosevelt expresses concern for the farmer, it is held up in a similar manner as purely a play for votes. According to these critics, there could be no sincerity in the following:—

"I warn my countrymen, that the great recent progress made in city life is not a full measure of our civilization; for our civilization rests at bottom on the wholesomeness, the attractiveness, and the completeness, as well as the prosperity of the country. The men and women on the farms stand for what is fundamentally best and most needed in our American life. Upon the development of the country rests ultimately our ability, by methods of farming requiring the highest intelligence, to feed and clothe the hungry nations, to supply the city fresh blood, clean bodies and clear brains that can endure the terrific strain of modern life. We need the development of men in the open country, who will be in the future as in the past, the stay and strength of the nation in time of war, and its guiding and controlling spirit in time of peace."

Blue-eyed Men for Jury Service

The psychologist will be interested in the theory of a prominent New York attorney who states that he prefers blue-eyed men to serve as jurors, because, as he says, "blue-eyed men are clearer minded."

This might naturally raise the question as to whether the races in which blue eyes predominate are composed of more level-headed thinkers than those in which dark eyes are the rule.

As the gentleman who propounds this theory bears a name which might consistently be regarded as of Scotch derivation, it is quite likely he may have had the Scotch people in mind, in which event the chances are that his theory would be accepted by many as based upon pretty sound reasoning.

A Neglected Field

That a large number of unfavorable conditions result from the common cold incident to the cooler seasons of the year goes without saying. It is also a pretty well established fact that few of the lay public have any real systematic ideas in their mind as to how to avoid taking colds.

If each family physician, as he came in contact with patients suffering from the results of a cold, could be able to impart some real, practical information as to how the family visited could avoid colds in the future, the aggregate results of such efforts on the part of the medical profession would in a short time be very great and an enormous benefit result to the public at large.

The question may naturally arise, Is there any real codified form of instructions by which the average family can learn collectively and individually how to better avoid the numerous colds which are likely to prevail from the first of October until the following April or May? if so, it should be widely distributed.

There is no doubt that the loss in earning capacity due to colds is a very serious factor in the maintenance of many families, while cases of pulmonary trouble which sometimes develop from these conditions are a tax upon the entire community.

There is probably no one factor in public health wherein the medical profession could confer greater benefits upon the lay public than in finding a solution of the question of how to avoid the common cold during the months in which it is prevalent.

Keeping Down the Population

There is always a certain percentage of the population who are worrying for fear there will be too much other population, so that they and their descendants may sometime or other have to go on shorter rations. There is much to comfort these people in the present disastrous tendencies of the automobile. Usually two to four victims constitute the total fatalities of an automobile smash-up, but a Philadelphia car, of large carrying capacity, seems to have broken the season's record, the entire cargo of nine joyriders being wiped out through some slight carelessness on the part of the excited steersman, who accidentally sent the machine over the side of a bridge.

Such incidents as the foregoing, multiplied by a great number of others, indicate that there are other means of keeping the population from soaring to embarrassing figures than the smashing of heads with the battleaxe.

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Original Articles

A NOTE ON THE TREATMENT OF THE GASTRIC NEUROSES.*

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THE neuroses of the stomach are generally enumerated as twelve: Two secretory,—hyperchlorhydria and hypochlorhydria (including achylia gastrica); six motor,—cardiospasm, pylorospasm, gastric hyperperistalsis, merycism, nervous eructation, and cyclic vomiting, and four sensory,—gastric hyperesthesia, gastralgia, bulimia, and anorexia nervosa. Formerly all of these conditions were grouped together under the title "nervous dyspepsia," and perhaps from the therapeutic standpoint this was not so illogical as might be supposed. The refinements of the chemical analysis of gastric contents, however, the methods of physical exploration of the stomach, and the facility with which its motor functions are now determined by modern procedures have contributed to a differentiation of disordered function in which perhaps too much stress is laid upon a symptom-diagnosis, or, at least, too much importance is attributed to one predominant manifestation, for the permanent well-being of the patient.

Accuracy and even refinement in diagnosis are by no means to be deprecated; on the contrary, they are to be encouraged, but in the careful cultivation of the narrower field the greater general condition is not to be lost sight of, nor its existence ignored. From the standpoint of the therapeutist, even the substitution of the term "gastric neurosis" for nervous dyspepsia has not been altogether fortunate, for it has favored the conception of a gastric neurosis as a morbid entity. Were this not the fact we should doubtless never hear the surgeon advocating the operation of gastroenterostomy for nervous dyspepsia, while it is not infrequently recommended for a gastric neurosis.

* Read at the Thirteenth Annual Meeting of the American Therapeutic Society, held in Montreal, Canada, May 31 and June 1, 1912.

Even more remarkable is the earnest argument of a surgeon, better known for his mechanical ability than for his professional knowledge, in advocacy of his particular method of "sewing up a gastric neurosis." Language is given to some for the confusion of their ideas. By patients the symptoms are sometimes described as the result of a "gas house alternating with a vinegar factory," and a careful interrogation as to signs and symptoms may verify the homely metaphor. The tenable conclusion is that the chemistry of gastric secretion and the physics of stomach motility are not elucidated in textbooks built on an isolated laboratory investigation. They should be predicated upon what the organism may do when its pathology is physiology gone wrong, and a neurotic subject is doing his, or generally her, utmost in the way of vagaries. However, when repeated investigations are conducted the basic condition is apparent and the details, considered in their proper perspective, only emphasize it. Again, the paresthesias may be clinically misleading: the heartburn, waterbrash, or matutinal vomiting is generally characterized as *sour*. The reaction to litmus may be neutral or even alkaline, and is but rarely acid. The lesson to be learned is that repeated examinations should be made to the end that the dominant or usual condition may be determined, and a correct diagnosis established; the latter is important chiefly in so far as it may define our therapeutic efforts. Thus, what has been assumed to be an achylia gastrica may prove to be merely gastric hyperperistalsis.

In general, to the treatment given under the several divisions of the subject, as presented in the standard textbooks on medicine or in the special works on gastric disorders, but little exception can be taken. When sufficient observation has been directed to the patient, so that the diagnosis is reasonably correct, the indications are generally well met by what is found in the books. Criticism is, however, needed to limit the apparently extensive and improper use of sodium bicarbonate in the treatment of hyperchlorhydria. Reflection and a more careful study of the chemistry of gastric secretion should lead to the substitution of *magnesium oxide* if one looks for permanent benefit.

It is important to call attention to the diet, which should be selected not so much in accordance with the chemical reactions of the stomach contents as with the condition of the patient, *plus* that of the gastric processes. It should be remembered, too, that quantitative as well as qualitative regulation is important; by proceeding thus, distinct prohibition may be eliminated. Further than this, exercise, and above all occupation, electricity, baths, and massage, so far as they may influence general conditions, should be more carefully considered and more intelligently and frequently employed. Of remedies directed toward the nervous system, many are useful, but discretion must be exercised, in order that they may have no deleterious local effect. The use of sedatives and especially of narcotics is particularly to be deprecated. Even more forcibly is the habitual employment of "pick-me-ups," bitters, and cocktails, especially the abominations in vogue in fashionable restaurants, to be interdicted.

As there is no panacea for the neurotic condition which dominates the individual, and of which the gastric neurosis is only one expression, so there

is no specific for any one of the twelve varieties of gastric neurosis. Each individual must be studied as an entire organism. With many neurotic women in the higher walks of life, in addition to the regulation of habits and the employment of physical agencies, as already mentioned, much benefit often comes from the administration of 10 drops of the tincture of nux vomica, 6 grains of resorcinol, and 1 dram of peppermint water diluted in 2 ounces of water after meals. This will often obviate the necessity for other medication.

This brief paper should not be construed as showing any lack of appreciation of what gastrologists have given to scientific medicine; nor does it ignore much of modern surgical work, which has been epoch-marking. It is a plea not for the less consideration of morbid gastric processes, but for the paying of more and better attention to an individual who is so unfortunate as to possess an unruly stomach.

THE HIGH-FREQUENCY CURRENT IN THE TREATMENT OF HIGH BLOOD-PRESSURE.*

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The high-frequency, high-potential form of electricity differs so materially in its effects on the human system from the older, better-known methods of electrical application, such as the static, galvanic, and faradic currents that it seems appropriate to give first a very brief *résumé* of some of the differences and effects of this newest form of electrical energy.

In 1891 Nicola Tesla demonstrated before the American Institute of Electrical Engineers an entirely new form of electrical discharge, and gave to it the name of high frequency.

A high-frequency current is one in which the cycles, a cycle being one positive and one negative wave, exceed in number 10,000 per second.

When a very slowly interrupted medical current is applied to a muscle, it produces a sudden muscular contraction, followed by relaxation; with a little higher frequency, *i.e.*, more rapid interruption, as in the faradic current, the muscle is thrown into tonic contraction. If the ampèrage is considerable, pain is produced; but when both voltage and ampèrage are increased, not only is a single muscle, but whole groups of muscle become convulsively contracted, and, when they are still further increased, the whole body, with every muscle, both voluntary and involuntary, is thrown into tetanic spasm and life becomes extinct.

When, however, the frequency or number of interruptions becomes greater than 10,000 cycles per second, the muscles no longer appreciate the

* Part of a "General Symposium on the Etiology and Treatment of High Blood-pressure," read at the Thirteenth Annual Meeting of the American Therapeutic Society, Montreal, Canada, May 31 and June 1, 1912.

stimulus and do not contract, and pain is no longer felt. Hence this frequency is put at the lowest limit of high-frequency currents.

As used in medicine the frequency runs much higher than this low limit, the cycles usually running from 200,000 to 2,000,000 per second, and with the tremendous voltage of from 10,000 to 500,000 volts.

Both frequencies and voltages much in excess of these limits may be freely passed through the system, but when given much higher than the limits mentioned they gradually lose their therapeutic properties on the human organism.

Just what the best frequency and the most advantageous voltage are for the effects on the body has yet to be scientifically demonstrated. Different types of apparatus and different sources of energy give somewhat different voltages and frequencies, yet all those that produce energy within the limits mentioned are capable of producing physiological actions and therapeutic effects.

We all know that the ordinary street current of 40 to 60 cycles and 110 volts, if passed through a person, will almost instantly kill him. What has happened, then, to the current which has been stepped up to, say, 500,000 cycles and 100,000 volts, to change it from a tetanizing, burning, deadly current to a mild, sedative or slightly stimulating one, which passes through the body not only without harm, but often without the person being conscious that he is in the electrical circuit?

The current of electricity is analogous to a current of any other fluid, such as water, and is acted upon by such similar forces as quantity or ampèrage, pressure or voltage, and resistance. The following simile has been given to explain the common effects:—

The overflow of a lake may pass out as a placid stream, quicken over a gentle decline, rush over the resistance of rocks in a rapid or through a rapid defile, or plunge over a precipice as a waterfall; on striking the resistance of the rocky bottom it is dashed into spray. In electricity the primary cell is the lake, the unbroken stream the low voltage, galvanic current, the broken rapids with the increased pressure the faradic current, the falls the high voltage, and the spray, produced by the tearing apart of the cohesion of the solid falls by the rocks, the high-frequency, high-potential currents, or, better, vibrations. A person struck by the solid water of the high waterfall would be instantly killed, but can stand unharmed in the midst when the water is dashed into spray. A sufficient fall of unbroken water will wash away and destroy trees, plants, and soil; the gentle spray nourishes them and stimulates their growth.

Just as the large ampèrage and low voltage electrocute a man, the atomized spray of the high-frequency, high-potential vibrations nourishes the individual cells of a person, and often restores morbid functions to a condition of health.

By the great increase of frequency and voltage the physical character of the electricity is thus entirely changed. The high-frequency current can no longer drive a motor as it did; the electrolytic action is gone; ordinary insulators do not confine it; it passes through glass as readily as does sunlight; it requires no longer a closed metallic circuit; it escapes from a single pole; it

is thrown out into the air as ether vibrations, and so is used in wireless telegraphy.

Effects on the Human Organism.

On the human body the properties of the high-frequency current are: it does not kill; it does not tetanize or even contract muscles; unless concentrated at a point, it does not burn; it does not cause pain, and the body seems to offer but little resistance to its passage, as is seen in the X-ray photographs. No matter where it enters the body it penetrates every organ and tissue, and, when a Geissler tube is held by another person near to the person saturated with the electricity, the escaping vibrations will light the tube, even when held, for instance, close to the shoe of the person taking the electricity.

In its passage through the body it seems to contract or modify the vibrations of individual cells everywhere, changing or stimulating abnormally vibrating cells, bringing them back to their normal vibrations, and thus restoring their health and function, as well as stimulating healthy cells to increased action.

Its action is thus *physiological*, and the fundamental value of this form of electricity seems to lie in the power of regulating and stimulating all nutritive processes.

From a series of physiological experiments conducted on animals and human beings, d'Arsonval, the French investigator, and others have arrived at the following conclusions in regard to the action of high-frequency currents:—

1. The respirations are quickened and deepened.
2. The heart beats more easily.
3. The pressure in the arteries is reduced.
4. The internal combustion, *i.e.*, the intake of O_2 and the excretion of CO_2, is much augmented.
5. The rate of the reduction of hemoglobin is increased.
6. The leucocytes and phagocytes become more numerous.
7. The body temperature rises slightly.
8. The elimination of the urinary solids, such as uric acid, urea, phosphates, sulphates, and chlorides, is increased throughout.
9. Perspiration is readily induced, with the still further elimination of excrementitious substances.
10. Glandular action is increased.

Thus all the metabolic processes are stimulated.

Action in High Blood-pressure.

From this rapid survey of the properties of high-frequency electricity let us turn to a consideration of its action and effects in relation to our particular topic, that of high blood-pressure.

When a person is placed in the circuit of a d'Arsonval current, *i.e.*, one of high frequency, moderate voltage, and high ampèrage, the particular form of application being called *autocondensation*, the patient at first experiences

no sensation. Very shortly the operator notices, and sometimes the patient is conscious of the change, that he is breathing somewhat more deeply and fully. Then a feeling of warmth appears in the wrists, the patient holding the metal electrode in his hands. This feeling of warmth gradually extends over the whole body; a gentle glow permeates his system, and if the treatment is kept up long enough, with considerable ampèrage, he breaks out into a perspiration. Occasionally he is conscious that his heart is beating a little more forcibly. These are the only sensations of which he is conscious, and all are agreeable in character.

If the blood-pressure of a person who has hypertension is taken before the electrical treatment, and again directly afterward, it will be found to have fallen. The extent of the fall in millimeters of mercury varies with different individuals, but in general the higher the tension the greater the fall, provided marked arteriosclerosis be not present.

In most of my patients, with the type of apparatus that I use, the average fall is about 10 mm. It often falls somewhat lower during the first hours, and then gradually rises during the succeeding twenty-four hours, but usually not quite so high as it was before the treatment. The first treatments may not keep it down for twenty-four hours, but each succeeding day, if the electricity is given daily, the tension remains lower for a longer time. Usually within a fortnight it stays down longer than twenty-four hours; then the treatment is given on alternate days, and so gradually the interval between treatments is lengthened to once a week, or even once a fortnight.

The sudden lowering of the blood-pressure by this current inclines one to think that it acts on the vasomotor nerves most strongly, and very likely it does; but if it acted on the nervous system alone, one would expect that as soon as the stimuli were removed the tension would quickly rebound to its former height, the underlying cause of the high pressure not being removed. Such is, however, not the case. The persistent effect induced leads us to look elsewhere for the explanation of the more permanent results that are produced.

Its action must be to modify and improve the underlying pathological processes that are causing the high blood-pressure.

The physiological effects enumerated a few moments ago, as determined by many investigators, all point clearly to the powerful action of high-frequency currents on metabolic processes. Clinically physicians who have used this current have universally found it beneficial in almost all cases of faulty metabolism and impaired elimination in which the pathological processes have not gone so far as to cause destruction of the tissues.

The paper of this series which you have listened to on "High Blood-pressure of Alimentary Autotoxic and Metabolic Origin" brought out quite clearly the importance of toxic products in producing hypertension. With this view I am strongly in accord, believing that intestinal putrefaction is the fundamental and most frequent cause of high blood-pressure in individuals past middle life, especially in those who are high livers, who are under great nervous and business strain, and who do not take a proper amount of exercise; many of these increase their tension further by interfering still more with their

metabolic processes through the excessive use of alcohol, tea, coffee, and tobacco.

Hypertension due to intestinal intoxication, in my opinion, almost always precedes; it is the toxic substances absorbed from the intestines which eventually induce the renal, cardiac, and arteriosclerotic changes so frequently associated with high blood-pressure, Bright's disease not being the cause of the hypertension.

The following case is an illustration of the general effects of the high-frequency current on a person in the earliest stage of Bright's disease, before renal symptoms were demonstrated:—

I was called one evening to see a man of 56 who an hour or two before had eaten a hearty meal, and who was feeling rather dizzy and strangely in the head. His face was deeply flushed, the conjunctivæ reddened, the temporals throbbing, the pulse full, hard, and with evident high tension. The heart was very slightly hypertrophied, and beating so forcibly that he was conscious of it. The second aortic sound was loud and ringing. His urine was normal. His general appearance suggested an impending apoplexy. He was given at once a vasodilator and a rapid cathartic. The next morning he felt pretty well again. At my office on taking his tension I found it to be 192. I suggested as treatment the high-frequency current instead of drugs. The first application brought down the tension 10 points; on succeeding days his blood-pressure gradually lowered so that in less than a fortnight it was about 170 before each application, and after the treatment about 160. At the outset, in order to test the effect of the current alone, he was given no drug, no change was made in his diet, and no mental suggestion was made as to his condition or improvement.

About a fortnight after commencing treatment he volunteered the information that he was feeling better in every respect. He is a consulting engineer, and has to compute difficult mathematical problems. He said that ordinarily he likes to do brain work, but that for some time before taking treatment work had been a great effort, and that he had difficulty in concentrating his attention for any length of time, and that he tired easily. Since taking the treatment these disagreeable symptoms had all passed away, he felt like work again, and it did not tire him as easily as before.

On another occasion he said that he could now sleep much better than previously. Before taking the treatment he had not been able to lie on his left side. He was conscious of his heart beating, and it seemed to smother him. Now he could lie in any position without discomfort.

On still another occasion he said that the treatment seemed to be making a young man of him, so far as his eyesight was concerned; on the building across the street there was a large vine, which had hitherto been simply a blur of green, but now, having taken the treatment about a month, he could distinguish the individual leaves. On being requested to test his sight in some different way, he later reported that an awning over a store that he passed every day had seemed to have alternate broad stripes of light and dark brown; now he was able to distinguish that one of the stripes was made up of several narrow stripes of different shades, which he had been unable to differentiate or appreciate before.

I then restricted his nitrogenous diet to meat once a day; he was averaging about once a week with the treatments, his tension being about 170. One day on taking it I found it to be 190; on questioning him he confessed that he had eaten freely of sausages the day before. The sudden rise of tension was clearly the result of autointoxication from faulty metabolism, or perhaps due to some toxin in the sausage itself. Whatever the toxin was, its chemical composition seemed to be in the nature of a colloid, probably a nucleoalbumin, because with daily treatments it took nearly ten days before I could get the tension permanently down to 170. Had the toxin been a crystalloid it should

have been eliminated inside of forty-eight hours. His improvement has been continuous and he now feels perfectly well.

Had this patient not taken high-frequency treatments I believe that in a few months, or a few years at the most, the intestinal toxins would gradually have produced a condition of hopeless chronic Bright's disease. Of course, a patient cannot judge whether his physician has really cured him, or has arrested his tendency to a disease and is prolonging his life; but the general feeling of well-being that he experiences after taking the treatments, the improved mental and bodily efficiency that he enjoys, and the pleasure that he gets out of life, instead of being depressed by its burdens, make him content to continue his treatments.

Conclusions.

From this necessarily incomplete and rapid study of the subject, I should like to offer the following premises and deductions.

The *premises* are:—

1. The underlying cause of most cases of high blood-pressure is metabolic, the condition arising from faulty digestion of food.

2. The hypertension usually precedes renal, cardiac, and arteriosclerotic changes.

The *deductions* are:—

1. By proper treatment with high-frequency currents the general condition, and especially the metabolic processes, are improved; hence less toxic material is formed and absorbed.

2. When, with the aid of the sphygmomanometer, hypertension is recognized early, we are able to cure the initial stages of the disease, because we remove the exciting cause.

3. The actual development of Bright's disease can be prevented.

4. When renal or cardiac lesions are already present, the rapid advancement of the pathological processes can be checked and life thus prolonged.

5. In the later stages of the disease, when compensation has broken and the heart has begun to fail, the resistance that the enfeebled organ is obliged to overcome is lessened by the lowering of tension; some of the symptoms can thereby be alleviated and the patient made more comfortable.

6. By the effect of the high-frequency current in lowering arterial tension, the brittle blood-vessels are protected from the liability of rupture, and the danger of apoplexy can thus be lessened and minimized.

HIGH BLOOD-PRESSURE IN THE TOXEMIAS OF PREGNANCY.*

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My material consists of 38 cases of pregnancy complicated with eclampsia, albuminuria, and vomiting of a toxic type. In 12 of the series the toxic condition was severe enough to call for the interruption of pregnancy. In all the other cases, except those specially mentioned, labor occurred spontaneously. The Riva-Rocci instrument, or else the Tycos, was used in making the blood-pressure estimations.

Convulsions.

In 8 cases eclamptic convulsions occurred. In these there was no maternal mortality, though 1 of the cases developed symptoms of cerebral tumor as she was recovering and was removed to the Royal Victoria Hospital, where she died after operation. The child was born alive. Four children in these cases were born dead or died soon after delivery.

The highest blood-pressure recorded in this series was 200 millimeters and the lowest 140 millimeters. Immediately before the convulsions the blood-pressure was between 170 and 190 millimeters in most of the cases. One patient of this series had three convulsions, though her blood-pressure never rose above 150 except at the actual time of the convulsion. Two cases of this series had a blood-pressure of 200, one with five and the other with eighteen convulsions. The child of the former died of convulsions fourteen hours after spontaneous delivery.

Vomiting.

There were 4 cases of severe vomiting complicating pregnancy: 2 early in pregnancy and 2 near term. In the latter the blood-pressure was 140 in one, and 125 in the other. In both of these cases labor was natural and the children born alive. Of the former, 1, whose blood-pressure was never above 125, recovered from her vomiting and went to term; while the other, a most severe case, was aborted at the sixteenth week and died ten days later. This case was peculiarly interesting, for the blood-pressure, taken several times weekly for some time, was never found over 110, and was usually about 100; yet she developed retinal hemorrhages, in addition to other signs of severe toxemia. She was delirious for eight days before death, and the *post mortem* showed the characteristic liver changes present. The brain was very edematous. The pituitary gland was markedly enlarged and cystic, and contained several small hemorrhages.

Albuminuria with Toxemia.

Of the remaining 26 cases, all were albuminurics with toxic symptoms of more or less marked severity. Seven of these had a blood-pressure record of

* Part of a "General Symposium on the Etiology and Treatment of High Blood-pressure," read at the Thirteenth Annual Meeting of the American Therapeutic Society, Montreal, Canada, May 31 and June 1, 1912.

160 millimeters or over, 2 of them recording as high as 180 millimeters. In 3 of them labor was induced on account of the severity of the toxic condition. In 12 of this series the blood-pressure was 140 or under, the lowest record being 120 millimeters. In this case labor was induced at the thirty-seventh week on account of the degree of albuminuria present.

Conclusions.

As a result of my experience I am inclined to conclude that the blood-pressure record is of little value as indicating the degree of toxemia present in cases of vomiting in pregnancy. Further observation would show that in this class of cases the blood-pressure falls below normal.

I have been surprised at the comparatively low reading obtained in many cases where the symptoms indicated the presence of a very considerable degree of toxemia. In 3 of my series induction of labor was imperative, though the blood-pressure was 150 millimeters, or under. In 4 cases with a blood-pressure exceeding 150 millimeters the toxic symptoms were so slight that the cases were permitted to go to term, and were delivered after natural labor.

I am inclined to consider the danger limit as 160 millimeters. In cases where, in spite of treatment, the toxic symptoms do not yield and the blood-pressure is maintained at or above this point, labor should be induced.

In cases of pregnancy with high blood-pressure without toxic symptoms, and I have met with several, there is little occasion for anxiety.

In all cases of pregnancy with hepatic or renal insufficiency the blood-pressure should be carefully observed. A rising blood-pressure in these cases, associated with other toxic symptoms, is indicative of danger, and 160 millimeters of pressure I consider the danger limit.

THE PSYCHIC EFFECTS OF ACCIDENTS.*

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The mental confusions on concussion or compression the result of a blow are psychic, but not psychogenic. They will therefore not be considered here. They are, however, sometimes the source of the false ideas designated as "postoniric," which must be considered autosuggestions. The mental obtusion produced by a blow, moreover, exalts the suggestibility. This is too obvious to need further comment.

* Read by invitation at a meeting of the Southern Association of Railway Surgeons, held in Washington, D. C., June, 1912.

The Emotion Excited by an Injury as a Perturber of the Apparatus of Internal Secretion.

An accident which does not injure may create in a susceptible person so great a fear as to cause a sudden increase of secretion by the thyroid gland. The recent researches of Crile have shown that this occurs almost constantly in patients with hyperthyroidism when they are frightened by the prospects of an operation. It occurs also in these subjects as a result of anxiety or unusual excitement. Crile believes that the thyroid gland is an organ by means of which there is rapidly available a store of an activating substance for the use of the neuromuscular apparatus when there is special need of its greatest power. Such an occasion is presented by the need for escape from danger. As the preservation of the species in locomotory animals may depend upon capacity to respond suddenly, and with maximum vigor, against impending danger, there has developed through the long course of phylogeny this special organ for the purpose of storing and rapidly setting free when required such a substance as the thyroid juice.

But it would be a mistake to confine the need for the greater activation of the gland to physical escape from danger in the crude sense. In the higher animals, life is no longer regulated by experiences purely phylogenetic, by the instincts. It is in the main controlled by ontogenetic incidents which we call experience, and which modify the reactions in fashions incalculably complex. The determinations of these modifications we call association of ideas. Now, quite apart from the fear of bodily harm, there is a vast series of possible events which man seeks to avoid and which he apprehends as dangers from which to escape. It is reasonable to believe that psychological situations of this kind are capable of reflexly demanding the hyperactivation afforded by the thyroid juice. That is, fear from any source may create a temporary hyperthyroidism.

But that the thyroid secretion is not the only one modified by emotion has recently been shown by a brilliant research of Cannon.

He has proven that the emotion of fear in animals is capable of stimulating the flow of adrenal secretion. He demonstrated that in frightened animals the blood from the adrenal vein is so rich in adrenal substance as to be capable of inhibiting peristalsis in an isolated strip of intestinal muscle. This is due to the presence of the adrenal substance in appreciable amount, since contact of the latter with the intestinal strip in a 1:1,000,000 solution will also inhibit peristalsis.

We already knew that the emotion of fear could inhibit gastric secretion, and Pawlow has shown that certain emotions of anticipatory joy can induce a flow of this secretion.

While it lasts, the fear state presents marked physical symptoms. It does so through the intervention of the autonomic nervous system, which cannot be controlled directly by volition except in rare cases, and in these only after much practice. One such instance I saw in Philadelphia recently with Dr. J. Madison Taylor. This man, an athlete, had devoted much attention to the

control of his reactions. He is able to provoke at will a pilomotor reflex which produces the goose-skin appearance. He claims, too, that he can modify the rate of his pulse, but he did not succeed in demonstrating this clearly to me. He is able also to bring tears to his eyes by purely psychological means. Careful analysis shows that none of these reactions occur from pure willing. To produce them he has to assume a peculiar emotional state, which he describes as one of mystery. His introspection of this is not clear enough for one to say that it is not a feeling of horror. He thinks it is not, because it is rather pleasant; but the pleasure may be that of accomplishing something for which he strives. The analysis need not further detain us; for I quote the case only to draw attention to the impossibility of affecting the autonomic nervous system by direct volition and to show the need of the intermediary of emotion for provoking autonomic reactions.

The above case may be compared with the simpler one described by Babinski, and which I observed in Paris in 1907. This timorous young girl, without practice in control, was so apprehensive of the pin-scratch used to elicit the plantar reflex that she involuntarily drew up foot and leg at the approach of the pin; and then there occurred pilomotor contraction upon the skin over the upper and outer part of the thigh overlying the muscles which contract in the defense reaction when one strokes the sole. The patient could not control this response in any way, and its strict localization is unlike that of the preceding case, in whom the goose-skin was general when it came at all.

Of course, these cases are somewhat peculiar, but horripilation is a very common reaction to alarm.

Other common consequences are alteration of pulse rate and of pressure: the frequency may become greater or less than normal, and the pressure be raised or lowered. Perhaps these differences depend upon the neurological type, or they may be functions of the varying responsiveness of the ductless glands in various individuals or at different times.

Upon the digestion the effects of alarm are well known to be malappetite and constipation, with all their accompaniments. Upon the respiration fear acts by a complete arrest followed by exaltation; or, mere shallowing may ensue. It is a consequence of the inhibition of muscular activity through the condition known as fear paralysis. This may be regarded as a phylogenetic mechanism for stabilizing an individual preparatory to efficient action.

The effect of terror upon the flow of urine and control of the bladder needs only mention. Even the ancients knew, too, how fear arrested the sexual functions.

The autonomic modifications of secretions soon cease, however, as the fear shock of the accident fades, and in a few days at most the animal experimented upon or the human being insulted resumes stable equilibrium.

Psychogenetic Factors in Modifying Ideas, Feelings, and Acts.

But this benign eventuality is often interfered with in human beings by the property they possess of reviving in memory the ideas which clothe situa-

tions with horror, apprehension, anxiety. Especially prone to this damaging sequence are persons whose imagination has been made rampant by the cultivation of the credulous fears of childhood. Their fear reaction to that which they do not understand is a dominant one, and they are easily beset by an idea linked with fear. The commonest of the fears which result from accident or injury is that of bodily harm. It is very hard for a person of this type, when ignorant of his own structure and functions, to shake off the foreboding created by an impressive catastrophe, and it must not be forgotten that what others regard as trifling the victim may look upon as catastrophic, judged by its possible effect on him.

The Sequence.

A. 1. Prepossession by the idea of one's own disability is an inevitable consequence. 2. This leads to abstraction from and inattention to the affairs of ordinary life, which, if not trifling by comparison in the patient's mind at least, cannot claim the attention properly needed. 3. Hence ensues the well-known diminution of the capacity to think, work, or take part in social life. 4. This incapacity, when the patient becomes aware of it, leads him to still further accentuate the result of his injury and thus to augment his alarm about his health. Thus is constituted the vicious circle of hypochondria. Even a nosophobia may ensue, such as the fear of lost manhood, insanity, paralysis. Alarm at this impending disaster must, of course, be distinguished from the primary alarm due to the accident itself.

B. The next step in the drama is the reaction against the actual absence of physical signs of injury and the reassurances of medical men. This takes the form of an unconscious search by the patient for justification for his belief that he is indeed damaged. Hence arise the familiar exaggerations and falsifications of symptoms. These are made in perfect good faith and honest belief; but they lead to the simulation of disease pictures previously in mind or acquired in the course of the disorder.

C. It is only after the patient begins to be convinced in his heart that he is mistaken that there ensues the deliberate self-deception practised in the desperate effort to preserve the respect of himself and his friends that he feels he would lose by admitting the absence of physical disorder after all.

By this mechanism may spring what Brissaud called sinistrosis,—the desperate determination in sickness against all conviction of error.

Even a favorable settlement of a lawsuit may not remove this attitude. Only skillful psychotherapy will do so; and in severe cases considerable time and much effort may be required at that. The following is a case in point:—

Hysterical Hemiplegia Complicating Various Bodily Disorders.—A woman of 41 was seen with Dr. John Nichols because of severe neuralgia of the left side of the face, left hemiparesis, peculiar dreamlike crises, hysteria, and nervous breakdown.

An osteomyelitis had been present since infancy. She was supposed to have had gall-stones ten years before, and since then had been constipated, until relieved by agar prescribed by Dr. Nichols.

The neuralgia had occurred from a chill at a funeral three years ago. It had lately been accompanied by headache at the left side, during which the face burned, and

actually felt hotter to the touch. Emesis did not occur, and there was no family history of migraine.

Six months before, she had fallen on her right hand in an elevator, and next day the left arm was paralyzed. Improvement took place after a verdict against the owner of the elevator and direct suggestion. But she constantly wore a leg-brace and walked with great difficulty. She was taking many narcotics and possibly a good deal of alcohol. The dreamlike attacks were those typical of toxicosis, and I believed were accounted for by the narcotics in which she had indulged. She was tearful, restless, frightened, and at times querulous from the same cause.

Physical examination showed deep reflexes exaggerated, the right patellar more than the left. There was a false clonus[1] when the left ankle-joint was forcibly flexed.

Motility.—There was no tremor, and the diadocokinesis was good. There was no other deficiency except an apparent incapacity of the left arm and leg. In reality, however, the resistance of these was quite good *when she was unaware that I was testing it;* and the unconscious movements she made in bed were performed without any deficiency. I was able to produce a slight improvement in the volitional movements on the left.

Sensibility.—At first there appeared to be a loss to coolness, touch, and vibration stimuli on the left leg; but it was very easy to suggest that she was mistaken; and she then readily both felt and localized these stimuli, except that she still declared that she could not feel vibrations in the lower limbs, especially the left. I could not demonstrate the falsity of her belief in this respect. There was hyperesthesia to pin, and even sometimes to touch, over the left leg, thigh, and face; and she declared that the neuralgic points of Valleix were still more sensitive. The visual fields were apparently restricted toward the left, at the beginning of the examination; but a very little address soon showed that there was no restriction whatever of the form field. The red field seemed limited bilaterally. The only other abnormality found was a deformity of the turbinate bone.

Diagnosis and Prognosis.—Although there was some physical disability from the old osteomyelitis, the condition of the reflexes and the absence of marked muscular atrophy showed that her incapacity was not due to organic disease of the nervous system, which would have caused marked reflex differences on one side of the body with spastic phenomena and extensor-plantar response or would have produced a marked muscular atrophy, with or without loss of sensibility quite different in type from that found. Besides, the hemiparesis ceased while the patient's attention was distracted, and could be modified by suggestion.

It was therefore *hysterical;* and it was only *increased* by the leg-brace, which fortified the patient's faulty notion regarding her left leg.

The so-called hysterical mental state, however, had a quite different source, being in reality toxic, and therefore unamenable to psychotherapy. The prognosis of this, however, was quite good if the cause were suppressed.

Treatment.—1. Cessation of the taking of drugs, physical measures being used to promote rest and sleep and improve nutrition, and a bland diet taken.

2. The leg-brace to be left off.

3. Re-education of the sensibility of the face and leg.

4. Finally, explanation of the nature and genesis of the condition, and re-education of the patient to a better understanding of herself, and how to prevent a recurrence of her disorder by a better planning of the somewhat strenuous business life which she led.

These measures Dr. Nichols carried out; and the sensibility recovered, the paralysis ceased, the dream states no longer occurred, and the patient returned to work a different

[1] By a false clonus is meant a series of contractions of the sural muscles, *produced by the will,* and not due to the successive stimuli by which a true clonus stretches the muscles during recoil of the joint. The false clonus is detected by the irregularity in extent and duration of the individual movements and by the great difference of interval between the several movements. Without a kymographic record, the difference is hard to detect unless one is experienced.

woman, until alcohol some months later produced another breakdown of which I have not the details.

Trauma Itself is Not Psychopathogenic.

In themselves neither trauma nor emotion can produce sinistrosis or traumatic hysteria. The real factor is the ideational complex in the patient's mind. It is the idea he has of the consequences of his accident and not the emotion of the accident itself which maintains his abnormality. The psychological mechanism at work may be termed "suggestion." Its modification is the same whether there is an accident or not. Illustrations may be found in the following cases:—

I. A chief clerk, aged 54, always rather peculiar in disposition, was seen with Dr. Claytor because of hemiplegia, which occurred suddenly, apparently in his sleep, one night. He had no pain, but was numb all over; could not get up properly, stuttered, lisped; his tongue seemed tied. At 11 A.M., Dr. Claytor found the right eye wider than the left (equal next day), and that all movements could be made, but that the right grip was weaker than the left. He thought it hysterical on account of the history. As in a few days he became completely hemiplegic, Dr. Claytor being doubtful, I then saw him.

Deep reflexes were equal and not exaggerated, but volitional contraction suppressed the right gluteal reflex. The right toe extended on stroking the sole. This, however, was done voluntarily. We shall discuss this later.

Motility.—The right arm was quite motionless, but moved when he yawned; the leg moved with difficulty; the contralateral synergic responses were equal, however. He stuttered in speaking.

Sensibility was normal.

Psychic Examination.—This showed the pathogenesis. He was particular to old-maidishness, and dyspeptic all his life. He was subject to petty worries and easily annoyed. Lately, he had feared losing his position to a pushing subordinate, and little family worries had occurred. A son had studied medicine, and he himself had often gone to the lectures, by which knowledge he understood the mechanism of his affection to be "a failure of the will to connect with what moves the arm." He defied me to make him move the arm by suggestion.

Treatment.—Entirely acquiescing, I explained that the fault was not in the connection, but in the controller himself, and admitted my inability to make his arm move, but declared that *he* could by practice. Having disarmed him thus, I easily inaugurated movements on the spot by suggestion, and he flexed and rotated the forearm and moved the fingers. Then his wife and doctor were called and shown the improvement. An encouraging prognosis was given, and a week's horseback tour advised. The iron was not struck while hot, so he did not recover for some time; but he is now well.

II. Hysterical Prurigo.—A girl aged 9 came to the dispensary on account of itching of the right side of the face. Her frequent scratching had kept up a pityriasis. This had begun two years before, after her father had for some weeks suffered much from furuncle, when he had itched all over, scratched much, and spoken of it a great deal. He still does so when he eats pork, thinking that it makes him itch. The little girl had only one boil on the right heel, and this she feared to scratch. It did not appear that the child's face had really been diseased; but I believed that the eruption was kept up by a morbid impulsion to scratch, and therefore prescribed sulphur ointment with the object of inculcating belief, and impressed upon mother and child the need of never touching the face, and assured them that the itching would totally disappear in two weeks, which prediction was verified by the result.

III. Hysterical Typhlitis After Appendectomy.—A girl of 20 was seen with Drs. Watkins and Stavely because of recurrences of right iliac pain with nausea and

vomiting, but with normal temperature and pulse, since three months. Two months before, the appendix had been removed for similar symptoms, and found little changed, though containing a concretion of lime. At the time, the ovaries and gall-bladder were found normal. The pains recurred every few days, lasted some hours, and were relieved by morphine or the Scotch douche.

Examination showed only a psychogenic hyperesthesia in the right iliac fossa, controllable by indirect suggestion. Some sacral atonia, a slight retroversion, and intestinal sand could not explain a manifestly psychogenic tenderness. After being convinced that a determination to conquer a longing for the comfort and anodynes which sickness brings would cure her, she went back to her home and remains well.

Litigation Not Itself the Cause.

It has been stated that a lawsuit is necessary to create traumatic hysteria. That this is not so is shown by the following case, where the idea of entire disability was created by the presence of a partial disability due to an accident and was very simply removed by psychotherapy without question of indemnity:—

Incapacitating Hysteria Engrafted upon Hematomyelia of the Right Hand and Arm Segments.—A man of 20, apprenticed mechanic since the age of 16, was seen with Drs. Conklin and Lewis Taylor in June, 1911. Two years before, he had dived to the bottom of a creek. The concussion which ensued kept him in bed with severe headache and unable to move for three days. Urinary incontinence lasted one day. He vomited at first. For nearly a year he was unable to walk without severe staggering; his speech had been very difficult, and still remained slow. He complained also of great sleepiness and difficulty in holding his water; so that he was quite unable to go to work, more especially as the right hand was partly wasted and paralyzed, and he feared that what he knew to be an organic nervous disease might be aggravated by exertion. There was loss of sexual power. The boy was normal with the exception of the following abnormalities:—

Reflexes.—The right plantar was absent, but there was inversion of the foot on stroking the sole. The right triceps was diminished.

Motility.—There was great atrophy and weakness of the extensors of the 3d, 4th, and 5th digits of the right hand to an extreme degree. The opposition of the thumb was now quite weak. The grasp of the hand and flexion of the wrist were relatively stronger. The abduction of the wrist was strong; the adduction of the fingers was quite weak. There was no other distinguishable weakness of the forearm.

Sensibility.—He complained of a perpetual tingling down the right leg, which occurred with each beat of the heart, night and day, except during sleep. But there was no difference on the two sides in the perception of coolness and warmth, and the sense of attitudes was now normal, although he stated that for two months he was unable to recognize the position of his limbs. I could not satisfy myself that he really felt less intensely, as he alleged, stimuli to the right leg by the tuning fork and the point of a pin; so that this hypoesthesia might have been suggested during my examination. A suspicion of its psychogenic nature was corroborated when I found that, although he declared he would sway when he closed his eyes, he did not actually do so when his balance was deprived of the assistance of his vision while I pretended to be examining the eyes.

Diagnosis and Prognosis.—The abnormalities of the reflexes, motility, and subjective sensibility, as well as the slow speech and difficult retention, are due to organic changes, very probably hematomyelic, resulting from the blow on the head in diving. They are not amenable to treatment, but they are by no means incapacitating; for even the grasp of the right hand was fair and the right thumb could be opposed so that he could handle a tool. The prognosis as to efficiency was therefore good.

Treatment.—He was accordingly informed of the organic nature of part of his difficulty; he was also told that the disease was not progressive, and would not be exaggerated by work, which would, on the contrary, improve him in every way, and very likely rid him of his heavy feelings. I recommended him therefore to begin work, and behave as if he were quite well. This he did, with the result that he continued at work, and is in excellent condition at the time of writing, six months later.

No commentary should be needed to show that this boy's idleness proceeded not from actual disability, but from the idea which he and his people held regarding his condition. He was the victim of a false fixed idea that he was gravely ill, and this suggestion was the cause of his incapacity when I saw him, while the organic destruction of the central nervous system had at that time no direct significance in that respect.

Malingering.

Finally, simulation must be considered. Two striking illustrations follow:—

I. Simulation of Dementia Præcox.—The patient was a young negro accused of murdering his wife, seen in consultation with Dr. Shute, the jail physician, on account of a suspicion that he was a case of dementia præcox. I was informed that some physicians believed him hysterical, and that others thought he was suffering from syphilis of the nervous system.

On examination, I found a well-developed man who showed no abnormalities of motility.

Reflexes.—The knee-jerk was made very violently (the explanation of this will appear), but there was no corresponding excessive reaction on tapping the tendo Achillis, nor was there extension of the great toe when the sole was stroked. The abdominal, cremasteric, conjunctival, and pupillary reflexes were present and equal.

Sensibility.—He was very unwilling to close his eyes for my examination of the sensibility, and, when touched by wool on the right side, opened them and jumped in alarm. He stated that he could not feel at all on the left side, but all his responses were made after much delay, and he was evidently suspicious and alarmed. The sense of attitudes was not lost; for though he pretended not to know in what position I had placed his left foot, he imitated that position when asked to do so. He declared that he could not feel the increase as I gradually augmented to 15 kilograms my pressure on the left shoulder. As he was unsupported and in the upright position, he must have been conscious, at least, of the muscles of the opposite side acting to maintain this attitude. Of course, even had the impulses from the muscles on the affected side been interrupted, as he pretended, the sound side would have detected the pressure; but he persistently declared that he felt nothing at all.

The diagnosis of simulation was clinched by the fact that, though he pretended not to feel a pinprick anywhere on the left side, yet when I distracted his attention by making him examine some pictures I had brought to elucidate his mental state, and jabbed him unexpectedly with a pin in the lower part of the left chest, he not only started violently, but he placed his hand over the spot, and first looked down and then at me. As I gave no sign, he slowly returned his eyes to the examination of the picture. The visual fields were not contracted.

As to his mental state, though it was apparently very dull, the stupidity he affected did not concord with the results of the tests I made. When I asked him how long he had been in jail he pretended with a vague stare not to know, eventually saying, "Two—three years." (He had only been a few weeks.)

By adopting a matter-of-fact manner and ignoring his expectations of meeting with the naïf credulity to which he had evidently been accustomed, I succeeded in learn-

ing that he had been a footman to a gentleman in the government service, who lived in a hotel, and who kept a white maid and a colored coachman who lived out. He did not admit, however, the remembrance of his name. His intelligence was thus of too low a grade even to pretend a tenable amnesia. I then showed him the pictures, in which at first he pretended not to recognize a tree, but later he saw the absurdity of his first statement that a man was holding in his hand a stick, when in reality it was a hose from which water was issuing; for he not only saw the absurdity when told, but detected the break in the hose. My experience shows that not every individual, even of good intelligence, detects this discrepancy. In another case he recognized that a horse pulling a sled uphill was not properly hitched, the chain not being taut; this discrepancy is rarely detected by patients. He thus showed a power of perception utterly at variance with the stupidity he alleged to me and to previous observers. Some weeks later, he was said to have contracture of visual fields. On examination he again alleged hemianesthesia; but I again tripped him up on one occasion, although several methods failed, on account of previous experiences. However, he ultimately confessed to feeling pinches on the back of his hand. He related various events to me quite clearly and accurately.

Being given the benefit of a doubt, which should not have existed, he was sent to the asylum; and I am informed that now he shows no somatic symptoms, and merely the mental state belonging to a low type of intelligence without any psychosis.

I should add that the hemianesthesia presented the character of the hysterical type, that is to say, it was absolute, affected all segments equally, and reached the midline exactly. Whether its source was in medical suggestion or simple simulation could not be ascertained; for, of course, the patient did not confess; and the numerous medical examinations which had been made without the precautions upon which Babinski has insisted afford a strong presumption of suggestion of medical origin, for it is the commonest source of anesthesia of this type. The exaggeration of the knee-jerks was a voluntary one, and can be easily simulated, as anyone can prove by trying it. This mode of reaction can be detected by an experienced observer. It probably was the result of the interest shown in it at previous examinations.

The case was clearly, then, one of simulation from desire to avoid punishment for the crime he had committed. The form in which the symptoms manifested themselves was determined by the faulty technique in previous medical examinations. The fault was similar to that stigmatized by Soury when he criticised Rainaldi's localization of cortical centers in conformity with the symptoms manifested when he tapped different parts of the crania of patients during hypnotism: "The symptoms corresponded with the textbooks which the different experimenters had read." What the observers had described was the result of their own suggestion.

And so it was in this case, both for the hemianesthesia and the knee-jerk. Moreover, by his mental reaction, the patient did his best to conform to the dementia syndrome which his interlocutors had in mind. But when a precise and rigorous method of examination had been pursued without *parti pris,* a very different picture presented itself, that of deliberate simulations in an ignorant person of low intelligence.

II. Simulated Quadrantic Hemianopsia.—An ex-sailor of 41 years was referred by Dr. Henning, to whom he had been sent by Dr. Burch because of inability to perform more than light work. He has a small pension and has applied for an increase. He declares that he was believed epileptic in the navy, and that, since the accident of falling out of his hammock while asleep fifteen years ago, after which he was totally blind, remembering nothing, life has seemed a dream; it is hard to understand people; his

memory is poor and he is very nervous on the street, not being able to see out of one side of the eye, and bumping into objects. As the hemiopic person always carries his head turned toward the side of the sound retina and has to turn his head still farther to see objects on that side of him, I suspected this man at once, for there was no deviation of the head.

I accordingly nonchalantly asked him to move a dark screen so that he could be hidden while stripping. He did this in a dark corner without any head movement to indicate loss of vision in the periphery of either visual field. But on approaching the field with test objects in the usual way, he declared that objects were only seen as they impinged upon the right upper retinal quadrant, *i.e.*, below and to the left. Since, to his apparent good faith, there was added a loss of the right Achilles reflex and some inequality of others, along with an uncertainty of the sensibility to the diapason on the malleoli, it was necessary to confirm either the patient's opinion that his visual field was restricted or my own that it was not. As the pupils reacted normally and the optic papilla was not diseased, an anterior lesion was excluded. The diagnosis of simulation was clinched by his winking when I placed before the right field of the right eye the percussion hammer with which I was ostensibly testing the orbicular response to a tap on the facial nerve. This took place, both from above and below, on the left and right side, and conclusively proved that he actually perceived objects with all parts of the visual field.

It is hardly conceivable that such a syndrome could have occurred by suggestion in medical examination, and I believe that it was intentional. This was proven when he visited me for the second time, after I had told his doctors what I had found; for on presenting the hammer in the same manner as before no wink occurred, the patient staring fixedly before him and declaring that he saw nothing except when the hammer was below to the left. It was, however, easy to show that he was feigning, by holding opposite the midhorizontal plane of the eyeball, just within the visual field, two strips of color. He saw only the one color, and when they were reversed similarly. But he saw the color which impinged upon the blind field, and not that upon the field which saw. Hence, his feigning was deliberate, as he had suppressed the reaction by which it had been formerly detected, and yet still showed, unknown to himself, that his blind field saw.

(*To be concluded in the December issue.*)

THE CARE OF THE PREGNANT WOMAN FROM THE STANDPOINT OF CHILD CONSERVATION.*

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From the standpoint of child conservation the care of the pregnant woman may be considered under two main headings: (1) the prevention of abortion and premature death of the fetus, and (2) the maintenance of such vitality and resistance to stress on the part of the mother-to-be as will insure to her offspring the opportunity for the best mental and physical development during its intra-uterine existence.

* Read at the Germantown Branch of the Philadelphia County Medical Society, April 4, 1912.

Causes and Prevention of Abortion.

To discuss intelligently the prevention of abortion or miscarriage, we must first be fully conversant with the causes of this accident, and in order to consider these causes in a systematic manner I usually adopt a modification of the classification of Taussig.

In a general way, the *etiological factors* may be conveniently grouped as follows:—

1. *Stresses* without the genital tract, such as acute mental disease, shock, severe and continuous strain, and the so-called "habitual abortion."

2. *Constitutional diseases* not directly affecting the genital tract, such as tuberculosis, the anemias, cardiac disease, etc.

3. *Reflexes, e.g.,* the tendency to abortion at the menstrual period.

4. *Diseases involving the genital tract,* such as endometritis, malpositions of the uterus, neoplasms, syphilis, the congestion induced by constipation and by frequent coitus, lacerations of any portion of the birth canal,—more especially the cervix,—and infantile uterus, where the organ is literally not large or expansive enough to carry a pregnancy to term.

With these conditions tending to cause abortion in a more or less indirect manner, there must also be considered the immediate or *exciting causes* of the accident. These may be grouped as: Mechanical irritation, thermic irritation, toxic irritation, nerve irritation, and death of the fetus.

Taking up the exciting causes in detail, it may be said that:—

1. *Mechanical irritation* may occur in the form of either direct or indirect violence to the uterus.

(*a*) *Direct violence* may result from overstretching, as in hydramnios and allied conditions, from pressure or torsion due to neoplasms or to inflammatory disease in or about the uterus, or from direct instrumentation, *e.g.,* the introduction of sounds, etc.

(*b*) As examples of *indirect violence* may be given a blow or fall, prolonged jarring as in horseback riding or motoring over rough roads, and severe strains, lifting weights, etc.

2. *Thermic irritation* is the result of the action of the extremes of heat and cold upon the pregnant uterus. It is sufficient to mention cold sea-bathing and the hot sitz bath.

3. *Toxic irritation* may originate from three sources: Chemical toxins, bacterial toxins, and placental toxins.

(*a*) The *chemical toxins* may be derived from drugs, such as the emmenagogues and oxytocics; from the by-products of pathological metabolism, as in diabetes, and from insufficient oxygenation of the blood, resulting in an excessive production of carbon dioxide.

(*b*) *Bacterial toxins* are formed in the course of infectious diseases—small-pox, measles, typhoid fever, and the like.

(*c*) The *placental toxins* constitute the group now held to be the essential factors in the causation of the toxemias peculiar to pregnancy, chorea gravidarum, hyperemesis, eclampsia, etc.

4. *Nerve irritations* may be psychic or reflex.

(*a*) As an example of the former may be mentioned fright, and severe mental strains.

(*b*) *Reflex* nerve irritation is but little understood, but may be very provocative of abortion, as is evidenced by the frequent miscarriage caused by the nursing of a child by a pregnant woman, the effects of local treatment, etc.

5. The *death of the fetus* is probably the most frequent single cause of abortion as well as the most difficult to avoid. According to Taussig, this occurrence may be due to five separate groups of causes, as follows: Congenital inanition, congenital deformities, interferences with nutrition, infections, and hyperpyrexia.

(*a*) *Congenital inanition* may be due to the physical condition of either or both parents prior to conception. The presence of wasting diseases, alcoholism or too frequent coitus may result in so great a lowering of the vitality of either the spermatozoön or the ovum that development, after proceeding for a few weeks, may cease, and death of the fetus result.

(*b*) With regard to *congenital deformities* it should be stated that the percentage of monstrosities in aborted ova is very high. It is obvious that such deformities must be of a directly fatal nature to cause fetal death. Amniotic adhesions are to be included under congenital deformities.

(*c*) *Interference with fetal nutrition* results either from the inability of the mother to supply the fetus with properly oxygenated blood, or from some form of placental disease, such as cystic disease of the chorion, premature separation of the placenta, knots and twists in the umbilical cord, etc., any of which may, by starving the infant of oxygen, bring about its death.

(*d*) *Infections,* including as they do syphilis, are by far the most common cause of fetal death. Indeed, so commonly is syphilis a cause of abortion that many obstetricians consider repeated accidents of this nature as an indication for specific treatment without further evidence of the presence of the disease.

The other infectious diseases which may be transmitted to the fetus—small-pox, measles, typhoid fever, etc.—are also, in smaller measure, causal agents in the cessation of development.

(*e*) *Hyperpyrexia* is a factor not infrequently met with, and, if it be remembered that the intra-uterine temperature is at least one degree higher than the surface temperature in health, it will readily be understood that any high fever will have a markedly unfavorable effect upon the vitality of the fetus.

When the above causes of abortion have been considered in logical sequence it is a comparatively simple matter to outline *prophylactic measures* against this occurrence. Prophylaxis is in reality of most value before conception takes place, but, as that phase of the subject is not included within the scope of this paper, it must necessarily be ignored.

Prophylaxis During Pregnancy.

Prophylaxis during pregnancy consists first of all in a careful study of the patient. It is all too common a practice for the physician to regard the

pregnant woman as merely pregnant and to ignore entirely evidences of disease which may be directly responsible for the loss of the child if not, indeed, constitute a serious menace to the life of the mother herself.

I have known of the death during labor of a woman who suffered from so severe a case of mitral stenosis that acute dilatation occurred as soon as the extra strain of labor was put upon the heart, and in whom the condition had not even been suspected by the physician until collapse took place.

A careful routine examination should be made of every obstetric patient, and, upon the recognition of any constitutional or local disease, appropriate treatment should be instituted. Of especial importance in this connection are the various forms of anemia, diabetes mellitus, tuberculosis, and syphilis, any of which, if untreated, may be a direct cause either of miscarriage or of improper nutrition of the child.

Violent and prolonged exertion should be avoided during pregnancy, although moderate exercise is beneficial. Should there be any tendency to irritable uterus the patient should be instructed to take to her bed at once upon the development of any pelvic symptoms whatever. It seems advisable to keep these women especially quiet during the times corresponding to the menstrual periods, at least the first four.

During the routine examination any marked abnormality of the pelvic organs may be noted and, if necessary, steps taken for its correction. The retroverted uterus may be elevated by means of a pessary or the assumption of the knee-chest posture several times daily. If tumors or inflammatory masses are present they must be carefully watched lest by their growth they interfere with fetal nutrition and so cause death *in utero* or by their position impede labor at term.

In the matter of securing the best possible nutrition and development of the fetus by proper attention to the mother-to-be, it is sufficient to say that in a general way this result may best be attained by a close adherence to the ordinary principles of *hygiene*. It is important to realize that pregnancy is not at all a pathological condition, but essentially a normal one, and that the disorders which arise during this state are not the complications of a disease, but accidents occurring in the course of a physiological process in which all the excretory and secretory functions are under considerable tension, and in which the nervous system is exceedingly susceptible to impressions and its usual poise readily disturbed.

With these facts in mind it naturally follows that the pregnant woman should be regarded not as a victim of disease to be cured, but as an entirely normal creature fulfilling her highest function. She should not be prevented from undertaking her usual occupations and enjoyments, unless they be of such a character as to render her more liable to traumatism or other accident.

The *diet* should be a mixed one and should by no means be restricted, unless to meet some special indication. It is a common practice to restrict the diet, especially in primiparæ, with the idea that the infant will as a result be under- rather than over- sized, and that labor will be consequently less difficult. This is, to my mind, faulty reasoning, since it is highly probable

that by such measures the child will be deprived of some of the constituents most necessary to its proper development and nutrition, and that, though the difficulty of labor may be lessened (and this, I think, is somewhat chimerical), the infant will be poorly nourished and not well fitted to attain its best growth in future life.

Rest in plenty I consider of prime importance, as rest means regeneration of tissue and repose of the nervous system, both of which are essential to the woman who is attempting the task of supplying nutriment to another economy besides her own.

In conclusion, I would again emphasize the need of a careful understanding of the physical and mental condition of the pregnant woman, the immediate correction of any abnormalities, and a close adherence to the common-sense principles of hygiene in the management of this too often neglected state.

Cyclopedia of Current Literature

ANOSMIA.

Three forms of anosmia are recognized by the author: 1. True anosmia. 2. Mechanical anosmia. 3. Functional anosmia. The condition may be permanent or temporary, uni- or bi- lateral, and central or peripheral. Peripheral anosmias are associated with alterations of the Schneiderian membrane, and may be caused by irrigation or spraying with toxic or caustic solutions, or by trauma or neuritis. Central anosmias may be of extra- or intra- cerebral origin: In the first instance the lesions may involve the olfactory tract or bulb, the adjacent bony structures, or the meninges. Intracerebral anosmias are due to lesions of the olfactory pathways in the cerebrum, and include the congenital forms of the affection. Functional anosmias occur in association with neuroses and hysteria. There is also a senile anosmia, an anosmia of the menopause, and one the result of diseases of nutrition such as gout and diabetes.

In the treatment of anosmia the author has had good results with the intranasal use of the galvanic current and with vibratory massage of the mucous membrane. The following powder may be used:—

℞ Strychninæ sulphatis, gr. iss (0.1 Gm.).
Sacchari lactis, gr. cv (7 Gm.).
Bismuthi subnitratis, gr. xlv (3 Gm.).
M. Sig.: To be snuffed up in the nose three times a day.

Castellani (Il Pensiero medico; Archives internationales de laryngologie, d'otologie, etc., July-August, 1912).

ARTERIOSCLEROSIS, TREATMENT OF.

Discussing this subject from the standpoint of physiological methods, the author states that in the employment of rest and massage the best results are obtained when the patient is put to bed for two or three weeks. The rest should be nearly absolute, though the patient may take his customary sanitary bath daily. He should have forty minutes of general massage daily by a competent operator. The author reports a case in which these measures led to a reduction of 26 mm. in the systolic and 8 mm. in the diastolic

pressures; these results, however, were not permanent.

The diet of these patients should be a mixed one consisting of easily digestible food, with a fair amount of residue, and moderate in amount. Breakfast should comprise fresh fruit, one egg, buttered toast, and milk or buttermilk. Dinner should consist of cream soup, a small piece of roast beef, roast lamb, roast or boiled mutton, roast or stewed chicken or very fresh fish, one baked potato and one other vegetable, a small helping of salad, and a simple dessert. The evening meal should be light, consisting of broth, bread and butter, buttered or milk toast, milk or buttermilk, custard, junket, cornstarch, rice or tapioca pudding, or fresh or stewed fruit. In the middle of the forenoon and afternoon the patient may have a glass of milk or buttermilk.

Hot or tepid full baths both reduce blood-pressure temporarily. In addition, the hot full bath promotes elimination of toxic material and nitrogenous substances by the skin. The hot bath is given at 106° to 112° F., depending upon the sensibility of the patient. He lies quietly at full length until perspiration appears on his forehead, usually in ten minutes. The bath may be started at 106° and gradually raised in temperature by the addition of more hot water, always determining the temperature with the thermometer. In obese individuals with fat hearts in addition to the arteriosclerosis, this bath may be followed by a blanket pack for one-half, three-quarters, or a full hour. The bath or the bath and pack is to be followed by a spray at 98° F., gradually lowered to 80°, 75°, or 70°, depending upon the reaction in the individual case.

For thin patients such treatment is too severe and should be replaced by the neutral full bath, at 98°, and never above 100°. The patient lies in the water for ten minutes; is then given a spray at 98°, dried, and allowed to rest for one hour or more. This bath may be given with plain or salted water.

Carbonated brine (Nauheim) baths should not be given in cases of arteriosclerosis with high blood-pressure, particularly when there are indications of nephritis. They tend to raise the pressure, and in 1 patient referred to appeared to contribute in bringing on a uremic attack.

In cases complicated by asthmatic attacks or by subacute or chronic bronchitis the Russian bath is of value. The patient reclines in a steamer chair in a room filled with steam so that he breathes an atmosphere saturated with moisture. After the bath the patient receives a tepid spray, is rubbed down, and rests for an hour. The measure was found to produce a marked lowering of systolic pressure.

The electric-light bath is of great value in arteriosclerotics, both robust and thin. In the robust its effect can be continued for from one-half to one hour by a blanket pack, and in the latter a spray should be given after the ten minutes spent in the cabinet. An hour's rest in bed should follow.

It is to be observed that all of the methods described, except the tepid full bath, produce sweating, and that after each treatment a period of rest is advised. In the author's opinion it is the sweating and rest which yield the benefit in these cases rather than any other obscure factor.

As for the autocondensation method of applying a high-frequency current, the author states that it may reduce blood-pressure, but that great care is necessary in employing it.

The passage of the high-frequency

current through a vacuum tube, with the production of ultraviolet rays, has a considerable value in the cutaneous anesthesia, hyperesthesia, or paresthesia of arteriosclerosis. It seems to be of greater value than either faradism or galvanism.

In insomnia the static wave applied over the patient's head ("crown breeze") at bedtime is often successful. John M. Swan (New York State Journal of Medicine, July, 1912).

BURNS, TANNIC ACID IN TREATMENT OF.

The efficacy of a solution of tannic acid for the relief of pain in small burns of the first, second, or third degrees, *i.e.*, in the presence of erythema, blistering or partial destruction of the skin, is pointed out by the author. A piece of gauze or cotton saturated with a 5 per cent. solution of the acid is applied. In ordinary slight burns such as are often received while working about the range or ironing, such an application will give complete relief from pain in less than a minute. In more severe burns showing a tendency to blister, not only is pain relieved, but blistering is prevented and the accompanying tenderness disappears. In a severe burn of the face, hands, and arms caused by ignition of fats while frying, the relief from pain, after partial removal of the grease from the burns by means of ether and alcohol, was greater in parts to which the tannic acid was applied than where carron oil had been previously used and allowed to remain. Boric acid, 10 to 20 grains to the ounce, or formaldehyde may be used as preservatives for the tannic acid solution. H. Winfield Boehringer (Medical World, October, 1912).

COLONIC CONSTIPATION, SURGERY OF.

Most cases of chronic constipation are colonic in origin, and many are obstructive in type. Often there is present chronic dilatation of the colon, with or without ptosis.

Radiography is a vital necessity in the diagnosis of all cases of chronic interference with bowel function; its negative value may be greater than its positive.

A chronically overdistended colon, whether adherent or not, never again becomes a normally functionating bowel.

Intestinal adhesions usually tend to recur in increased intensity. They only cause symptoms when put under stress or tension. Prevention of tension and physiological rest to the affected organ are obtained only by colectomy, colostomy, or exclusion.

Of these, colectomy as advocated by Lane is an operation seldom advisable and having many obvious objections from the standpoint of the patient and physician. It is too grave a procedure to be undertaken except in the most aggravated cases. Strictures, neoplasms, and other obstructions should be removed by excision of the diseased tissue and lateral anastomosis of the bowel. Exclusion by ileocolostomy is safe, easy to perform, and most satisfactory in the restoration of normal peristalsis and consequently normal health.

After experience with nearly 50 cases requiring exclusion or resection of the colon for obstructive constipation, with but 1 failure, the author feels fully justified in recommending it in all cases of aggravated colonic obstipation, whether congenital, postoperative, or dependent on some mechanical obstruction or narrowing of the bowel. L. J. Hirschman (Annual Meeting, American Proctologic Society, June 3 and 4, 1912).

CORNEA, TREATMENT OF ACUTE STAPHYLOMA OF.

Epinephrin has been used for the relief of pain in all forms of keratitis, and

in the relief of tension in acute glaucoma has proved very valuable. Experimentally it has been found to reduce the formation of the aqueous humor in animals. The author was induced to use the drug in acute staphyloma of the cornea, so frequently seen in ulcerative keratitis, instead of puncture and a pressure bandage, or subsequent partial excision of the cornea. He reports 6 cases in which excellent results were obtained.

In a patient with cornea bulging 3 mm. as a result of previous ulcerative keratitis, a 1 to 1000 solution of epinephrin was instilled and marked relief afforded within an hour. The patient was directed to instil such a solution three times a day. Upon his return, two days later, less bulging of the cornea was noted, and at the end of four weeks it had entirely disappeared.

In another case in which the cornea has sloughed away almost to Descemet's membrane as the result of a lime burn, and was beginning to bulge, the instillation of epinephrin three times daily caused the bulging to disappear within two days. Two months later, the cornea was very hazy, but there was no semblance of ectasia.

In a case with corneal perforation accompanied by prolapse of the iris, epinephrin was used in addition to the regular treatment. The iris was freed and no bulging followed.

There were no failures when the epinephrin solution was used as directed. The adrenal active principle has no specific effect upon the corneal tissue, but reduces staphyloma by constricting the arterioles, thus relieving the pressure in the lymph areas, reducing the intraocular tension, and allowing resumption of normal form on the part of the cornea. Paul J. Pontius (New York Medical Journal, September 28, 1912).

CORPUS LUTEUM EXTRACT, THERAPEUTIC USES OF.

After eight years' experience with this substance in a variety of functional disturbances, the author states that the results obtained, in conjunction with those witnessed by Dr. Howard A. Kelly, have been so definite and superior to those yielded by ordinary ovarian extract as to lead to full conviction that the corpus luteum plays the principal, if not the entire, rôle in the internal secretory activity of the ovary, so far as it has to do with causing menstruation and so far as it represents the substance removal of which brings on nervous manifestations at the menopause.

The material used was the corpus luteum of the sow, put up in tablets each containing 20 grains of fresh corpus luteum. These tablets deteriorated with age, but when fresh appeared to be as effective as the raw substance.

When given by the mouth corpus luteum, even in large doses, has little or no toxic effect. It was found a valuable means for controlling the nervous symptoms at the natural or artificial menopause, great improvement occurring in about 90 per cent. of the cases. In some, 1 tablet three times a day sufficed; in others, the dose was as much as 18 or 20 tablets a day. Some patients complained of the taste of the tablets and occasionally of slight gastric upset; otherwise no unpleasant symptoms were noted. Benefit usually appeared in a day or two. In some patients the drug could be stopped after a few weeks; in others much longer administration was necessary.

The most striking results were obtained in a class of patients usually

described as neurasthenics, most of them over 35 years of age and menstruating regularly, but complaining of excessive nervousness, of being very easily fatigued, usually more so at the menstrual periods, sometimes of slight dyspeptic symptoms and frequently of psychic depression. In these patients surprisingly quick and complete response is shown to lutean therapy. The author gives about 9 tablets a day in the ten days before menstruation, reduces this to 6 during the flow and then to 3 until the next period. Often this treatment carried out for a month will give relief for many months, the result being, as it were, a re-establishment of a broken compensation between the internal secretory glands.

Good results were also obtained in cases of functional amenorrhea, both in young girls and adult women. This applies both to the obese type and that in which there is lack of fat development. Those who were fat, in addition to regaining menstruation, usually, but not always, lost weight. The drug was also efficacious in many instances in increasing the amount and duration of the flow.

In dysmenorrhea the results were very uncertain; the nervous symptoms were sometimes helped.

There would seem to be a possibility for the drug in cases of unexplained sterility and repeated abortions.

From clinical experiences the author is inclined to believe that the corpus luteum possesses different properties due to different chemical constituents. One of these causes hyperemia of the pelvic organs; another relieves nervous symptoms of a toxic character, as at the menopause. It would seem that this product acts as a neutralizer, since even large doses of corpus luteum cause no intoxication. On the other hand, the toxic results of intravenous injections of the lutean extracts as well as the nervous phenomena of menstruation show that there must also be some toxic material present which is not absorbed from the stomach or intestines. Curtis F. Burnam (Journal of the American Medical Association, August 31, 1912).

DYSPHAGIA IN THE TUBERCULOUS, RELIEF OF.

The technique and indications for alcohol injections in the vicinity of the superior laryngeal nerve are discussed by the author, who reminds us that this nerve passes through the thyrohyoid membrane at the junction of its lower third and upper two-thirds, 8 or 10 millimeters in front of the greater cornu of the hyoid bone, and 2½ to 3 centimeters from the median line. This point having been determined with the finger, —confirmation being frequently afforded by a start on the part of the patient when pressure is made at the right spot,—the larynx is immobilized with the left hand and the needle plunged perpendicularly through the skin, subcutaneous tissue, superficial fascia, and infrahyoid muscles. A sensation is then felt as though the needle were moving in a free cavity, and the point is cautiously moved about until the nerve has been reached, as indicated by pain radiating into the throat and ear. The injection is then given.

Wounding of the superior thyroid artery is a possibility, but does not seem to have given any trouble so far. To avoid every chance of it, Paul-Boncour has recently advised that the needle be introduced in the median line, half-way between the angle of the thyroid cartilage and the hyoid bone, until the thyrohyoid membrane is felt, when a few drops of fluid are injected to sep-

arate the tissues, and the needle then directed directly outward, parallel with the upper border of the thyroid and ½ centimeter above it, until, when there has been a penetration of 2½ to 3 centimeters, pain indicates that the nerve has been attained. According to its author, this plan is more certain than the usual one, reaches the nerve from its superior aspect, and therefore avoids any risk of injuring the artery, which is generally situated below, and in addition permits of injecting on both sides with but one skin puncture. The writer believes, however, that if a fairly long needle is used, unattached to the barrel of the syringe during its introduction, there is but little danger of injuring the artery.

To minimize the pain temporarily brought on by the alcohol injection the author heats the alcohol (85 per cent.) to 45° C. (113° F.) before use and adds to it stovaine, 1 per cent.

Such injections bring about relief from dysphagia for periods averaging two or three weeks, and which may even attain a month or over. Besides, the resulting cessation of local muscular efforts and laryngeal spasm not infrequently leads to evident betterment in the tuberculous lesions, while the general condition naturally improves owing to better feeding.

Nonetheless, there are occasional cases in which the procedure fails to relieve, or in which, after relief as a result of the initial injection, further injections prove ineffective. Such occurrences may be due to one of the following causes: 1. The nerve has not been reached; whence Hoffmann counsels that, in the event of failure to relieve, the injection should be repeated a few hours later or on the following day. 2. Some have thought that the recurrent laryngeal nerve also includes sensory fibers; for this reason the last few drops of alcohol should be injected more posteriorly in order to reach the anastomotic branch to the recurrent. 3. There may be present lesions outside the domain of the superior laryngeal, *e.g.*, at the base of the tongue, lingual tonsil, etc.; or, there may be a neuritis of the superior laryngeal itself. 4. Some forms of dysphagia are merely mechanical; with each attempt at deglutition there occurs a violent coughing spell, owing to loss of function of the diseased epiglottis, arytenoepiglottidean folds, and arytenoids, with resulting entrance of food into the larynx. The essential point, then, is to select the proper cases for the procedure, which, if this be done, will continue to render valuable service. M. Lannois (Lyon médical, September 15, 1912).

GONORRHEAL RHEUMATISM, TREATMENT OF.

The following rules are adhered to by the author in the treatment of this condition: 1. Never put the affected joint in a cast, but encourage the patient to exercise it as much as he can without giving himself pain. 2. Never forcibly bend an inflamed joint, nor have it massaged. 3. Do not allow the patient to keep the affected joint in one position long at a time. 4. Never bruise or tear the urethra in dilating it, but increase the size of the sounds gradually to the desired degree. 5. Give all the mixed gonococcic vaccine the patient can take without exhibiting a negative phase; use large doses. 6. Employ hyperemic treatment twice daily, preferably in the form of hot, wet packs together with the Bier bandage. 7. Keep the bowels a little looser than normal, and have the patient drink all the water he can. E. D. Holland.

Another writer reminds us of the importance of *prophylactic measures* against gonorrheal rheumatism when the treatment of a fresh case of urethritis is begun, especially if the patient has had rheumatism in former affections. To this end it is advisable to order from 5 to 10 grains (0.3 to 0.6 Gm.) of phenyl salicylate four times daily, after meals and at bedtime. If by judicious local treatment, when the case is seen within the first forty-eight hours, one can limit the infection to the anterior urethra, systemic infection giving rise to gonorrheal rheumatism is most unlikely to occur.

The *treatment* of *gonorrheal tenosynovitis,* or gonorrheal rheumatism in its mildest form, consists in rest of the parts affected. If the pain is intense, local bloodletting is often extremely effective. Over the involved tendons the limb should be covered with the following paste, itself retained by a flannel roller bandage:—

℞ Methylis salicylatis, ʒiiss (10 Gm.).
Zinci oxidi, gr. xlv (3 Gm.).
Adipis lanæ, ʒiss (50 Gm.).
M. et ft. ung.

Phenyl salicylate, given subcutaneously, appeared in the author's experience to hasten the cure:—

℞ Phenylis salicylatis, gr. xv (1 Gm.).
Chloroformi, ♏xv (1 Gm.).
Olei amygdalæ expressi, fʒij (8 Gm.).
M. Sig.: Ten c.c. four times daily in subcutaneous injection.

When the acute symptoms have subsided, massage will complete the cure, preventing the formation of adhesions.

In *acute gonorrheal arthritis,* if there is fluid in the joint, it should be removed by incision, the joint freely flushed out, the incision closed without drainage, and the limb splinted. Massage and passive motion should be begun very early. Where there is no fluid in the joint, it is more probable that the process is extra-articular, and in this case the treatment described for tenosynovitis is to be employed. Vaccine treatment is of great use in these cases, especially when they run a protracted course.

In *chronic gonorrheal arthritis,* an essential point is to find the primary focus of infection. Thus if the prostate is responsible, the usual treatment of chronic prostatitis is indicated. When the seminal vesicles are involved, massage, or vesiculotomy, if necessary, must be carried out. Vaccine treatment is of greatest use in these cases. C. G. Cumston (New York Medical Journal, September 28, 1912).

GROCCO'S SIGN IN PLEURITIC EFFUSION.

This sign, which, as is well known, consists of a triangular area of dullness, paravertebral in position, situated on the side of the chest opposite the effusion, proved itself, in the author's experience, practically constant in cases with free fluid in the pleural cavity or in which an encapsulated effusion impinges on the spine.

With the patient lying on the affected side the triangle either greatly diminishes or disappears (except in those rare instances where the pleura is enormously distended), to reappear when the patient reclines on the opposite side or assumes the sitting or standing position.

The paravertebral dull area does not form a perfect triangle; the hypotenuse is usually a curved line, particularly at the upper portion. Its size in general varies with the amount of fluid in the pleural cavity, but right-sided effusions are usually accompanied by a somewhat larger triangle than those on the left.

The sign is of particular diagnostic aid when the amount of fluid present is

small. It must not, however, be regarded as pathognomonic, as evidence is accumulating to the effect that the triangle may be present in a number of subphrenic conditions associated with the massing of fluid. Mark A. Brown (Lancet-Clinic, June 15, 1912).

HEPATIC ABSCESS, TREATMENT OF.

The author describes his experiences in the surgical treatment of 24 cases of abscess of the liver consequent upon amebic dysentery. He emphasizes the facts that deep liver abscesses do not fluctuate, but can be detected with a hand placed on the liver surface by a feeling of induration; that a large percentage of them develop from a focus high in the upper half of the right lobe, at such a point that perforation into the lung is the most probable termination without surgical interference, and that the mortality of any surgical procedure is greatly increased after the lung has become involved. A cough developing in the course of liver abscess indicates immediate operation, unless it can be attributed to causes other than a beginning lung involvement secondary to liver infection. By keeping the patient in Fowler's position after operation, the lung complication can be entirely avoided.

In all cases of suspected hepatic abscess the author urges abdominal incision rather than an exploratory puncture. A negative result with the needle is of no diagnostic value, while a positive result may be followed by peritonitis, if the needle be withdrawn, without the possibility of isolating the wound in the liver from the peritoneal cavity.

In 19 of the author's operated cases the abscess was found high in the right lobe. Where the liver was not adherent to the peritoneum, they were treated by removing the 9th and 10th costal cartilages at the upper angle of the abdominal incision, stitching the parietal peritoneum to the liver, and allowing an interval of forty-eight hours for adhesions before opening the abscess. Where the liver was found firmly adherent, on the other hand, the point for drainage was easily located from within and the abscess at once opened by an incision opposite this point, with removal of a section of rib. In one case drainage through the diaphragm, with the pleura sewed off, was successfully resorted to. No instance of peritoneal infection followed the abdominal operation.

In establishing drainage the field was isolated with gauze and the abscess aspirated through a needle; as the latter was withdrawn, a small gauze trailer was packed down to the wall in order to prevent leakage and preserve a track to the abscess for future guidance. The lower end of the wound was then closed and the field protected with gauze for immediate drainage; or, the peritoneum in the upper angle of the wound was loosened from its abdominal attachment and sewed down to the liver and the wound closed, with the exception of the exposed patch of liver through which the abscess was opened forty-eight hours later, without anesthesia. No bleeding was encountered which a gauze pack would not control, even when 5 or 6 inches of liver tissue had to be traversed to reach the abscess. The difficulty hitherto sometimes met with in stitching the peritoneum to the liver was avoided by abandoning the idea of bringing the liver up to the abdominal wound, and simply loosening the peritoneum from the fascia for 1 or 1½ inches around the margin of the wound, so that its edges drop down upon the liver surface without tension and can be held by a few catgut sutures until adhesion takes place.

Rea Smith (California State Journal of Medicine, July, 1912).

INFANT FEEDING, SIMPLE METHODS IN.

Recent demonstrations by Czerny and Keller of the comparative innocuousness of the proteid in milk and the importance of the rôle of the fats, as well as by Finkelstein, of the relationship of the carbohydrates, salts, and whey itself to the nutrition of infancy, have led the author to discard the more complex cream, top-milk, or percentage mixtures in infant feeding, and to substitute simple milk dilutions, with sugar added to a definite percentage.

The calculations as to quantity are made on the basis of the average normal weight of a child at a given age, and the definite number of calories per kilogram of body weight shown by Heubner and Rubner to be required at different ages. The average normal weight of the newborn is taken as 3000 Gm. and the normal rate of growth 500 Gm. per month. The number of calories required per kilogram are: first three months, 100; second three months, 90; third three months, 80; fourth three months, 70. For children of the first six months of life, the dilution employed is half milk and half water, plus 5 per cent. sugar; from six to nine months, two-thirds milk and one-third water, plus 5 per cent. sugar; from nine months on, whole milk. One liter of milk is rated at 600 calories, and 5 per cent. sugar at 200 calories. As an illustration of the practical application of these principles, a child of 7 months should weigh 6500 Gm. Caloric requirements at 80 calories per kilogram, 520 calories. This is furnished by 850 c.c. of two-thirds milk with 5 per cent. sugar. This amount is accordingly given in the twenty-four hours.

An essential feature of the simplified method is long feeding intervals, viz., 5 feedings only in the twenty-four hours, —a principle emphasized by Czerny. One must bow at times to prejudice and long-established custom, and compromise on a six-feeding schedule, but, as a rule, after the first few weeks 5 feedings should be insisted on, viz., at 6 and 10 A.M., and at 2, 6, and 10 P.M. During the night the child may drink boiled water *ad libitum*.

As to the choice of sugars, maltose-dextrin is best. Lactose may be used with impunity in the well child, although dyspepsia and constipation are more frequent with its use, and the weight increase seems to be less rapid. Cane-sugar is permissible.

When the child gains up to a certain point and then stands still, and it does not yet seem safe to use a dilution of increased strength, 10 Gm. of ordinary wheat flour may be added to the day's feeding, and practically always the gain will be resumed. This procedure also antagonizes constipation, but is recommended only after the third month. Oatmeal water containing ½ to 2 ounces of oatmeal to the quart may also be used where there is constipation as the diluent instead of water.

Experience shows that it is quite safe to begin with one-half milk at a very early age, as well as that one-third milk is often insufficient. When whole-milk feeding is begun, the author generally requests that the upper ounce of cream be removed from the quart bottle, rapidly re-adding this as soon as it is evident that the child is not going to react with vomiting or constipation.

The last principle emphasized by the author is one hitherto little recognized, viz., early addition to the infant's diet of fruits, vegetables, and broths. In the

healthy infant, and many sick ones, the author gives daily, from the sixth month on, one feeding including broth (small saucerful of chicken, mutton, or beef broth); stewed fruit (apples, prunes, apricots), and a vegetable (stewed turnips, carrots, spinach). The fruit and vegetables must be thoroughly cooked, finely divided, and given in tablespoonful quantities each. The broth acts as a vehicle for salts, which aid water retention, while the fruit and vegetables furnish organic salts and acids. The infant takes readily, often greedily, to these additions; a laxative effect is frequently evident, and the iron content counteracts the anemic tendency. A certain organic "something" seems to be supplied which is lost in the milk-heating process. The author's experience with these simplified measures has been practically uniformly successful, and he therefore urges their adoption in routine feeding in private practice. David J. Levy (Journal of the American Medical Association, June 22, 1912).

INSANITY, VALUE OF THYROID FEEDING IN.

The author used large doses of thyroid —60 grains (4 Gm.) of thyroid extract a day in three doses—in 41 insane patients. Abundance of ordinary food was allowed during treatment, but no other drug given except an occasional aperient. The patients were all put to bed one or two days before the treatment was started. The thyroid was given for fourteen days in most cases, though in a few instances, the temperature rising to 101° F. and the pulse rate to 120, it was stopped temporarily or permanently.

Of those treated, 34 per cent. recovered, 12.1 per cent. were improved, and the remainder not benefited. Out of the 14 recoveries, 7 cases were suffering from stupor, 6 from chronic melancholia, and 1 from mania; of the 3 improved, 1 was a case of stupor, 1 an imbecile, and the third a case of dementia præcox with attacks of catatonic excitement.

In all, the mental condition had lasted a considerable time and the usual treatment been tried without success. The conclusion reached was that thyroid is not applicable to all form of mental disorder with a tendency to chronicity, and is certainly of no use in secondary dementia, the object of all therapeutic measures being to save a patient from this hopeless condition. The drug appears to play the part of a powerful alterative, and therefore the treatment should not be adopted unless the physician is able to be constantly in attendance to observe the effects produced. All patients undergoing a course of thyroid feeding should be kept in bed under the observation of a careful nurse by night and day, and the pulse and temperature recorded.

The cases most likely to be benefited are those of stupor or melancholia in adolescents, where the condition is not of so long a standing that nervous structures are likely to have been impaired to any great extent. Cases of dementia præcox are not favorable subjects. Signs of improvement must not be looked for during or immediately after the course of thyroid feeding, for they do not appear generally until about four to six weeks after the treatment has been discontinued. Richard Eager (Journal of Mental Science, July, 1912).

PAPILLOMA OF BLADDER, HIGH-FREQUENCY CAUTERIZATION IN.

The appalling frequency of recurrence following suprapubic operations for the removal of bladder tumors has led many to doubt whether such cases should be

subjected to operation. A method by means of which any trained cystoscopist can thoroughly destroy such growths has, however, now been realized in Beer's application of the Oudin high-frequency current to intravesical work by the use of a simple insulated cable which can be passed through the catheter channel of any modern cystoscope. The ordinary double catheterizing instrument of Nitze is more generally useful than any other, though pedunculated tumors of the trigonum can usually be seen in profile through direct vision instruments, thus permitting of transfixion of the pedicle by the electrode. The author uses as electrode a steel wire from which the insulation has been stripped for a distance of 2 to 5 mm. at its tip. In most villous tumors the electrode is simply buried in the soft tissue of the growth. When the current is turned on there is an almost immediate blanching of the tumor tissue at the point of application, followed in a few seconds by partial disintegration and even charring, with the evolution of hydrogen gas. Except when one is working very near the bladder wall the current is quite painless, and the author finds it best to keep the electrode in contact with each point of application for at least one minute. The current must be applied only under the vision of the operator, so that in the event of hemorrhage the current can at once be turned off and irrigation through the opposite channel of the cystoscope practised until the fluid is again clear.

Only exceptionally has the author found it necessary to use a local anesthetic. As for the frequency of the sittings, when the growth is large he operates every seven to fourteen days. Later, when it becomes necessary to burn nearer the bladder wall, he proceeds more slowly, because the bases of the tumors thus treated are often surrounded by an area of œdema bullosum, which may easily be mistaken for neoplasm. Under such circumstances he discontinues all instrumentation for several weeks in order to determine the nature of the lesion.

Whether the Oudin current acts simply as a convenient means of cauterization or possesses in addition a certain selective action for neoplasm, or the tissue in which it grows, is not yet known, but, as an ascertained fact, it affords an efficient means of destroying bladder tumors which is practically painless and devoid of danger. In some cases it is undoubtedly possible to effect a permanent cure, and, in others, to give decided relief. The author reports cases thus treated. Burton Harris (Long Island Medical Journal, July, 1912).

PRURITUS ANI, OBSERVATIONS ON.

From his experiences since discovering that a skin infection is the important factor in pruritus ani, the author believes that we are now in a position to state that there may be two varieties of this affection: One may be coincident with some of the diseases of the rectum, and in it the skin infection is not present. He designates this form as "pruritus ani simplex." The other variety, which is chronic in character and in which the skin infection is present, he designates as "coccigenous pruritus ani."

It is shown by the nine hundred consecutive cases of rectal diseases studied that constipation and hemorrhoids, or any other lesion, are coincidental with or may predispose to, but are not the exciting cause of, pruritus ani. Even when there is a discharge of pus or other moisture on the skin about the anus, this is not the actual cause of pruritus ani, unless there is a streptococcic

or other infection of the skin. The excess of moisture and the infiltrated condition of the skin in these cases are due to the low-grade inflammation caused by skin infection and are not the result of moisture coming from the inside of the anal canal.

Concerning treatment, the author believes that stock vaccines will not give good results because they are made from a different branch of the streptococcic family than the one causing pruritus ani. As for the making of autogenous cultures, he advises the use, in addition to the usual hard media, of the liquid media and Gordon's series of carbohydrates, in order to differentiate the streptococci and other bacteria. In employing the cultures for treatment, it is important to avoid excessive reaction, to use small initial doses, and repeat injections only after the previous reaction has subsided. Marked improvement or cure was obtained by the author in all cases thus treated. Dwight H. Murray (Annual Meeting, American Proctologic Society, June 3 and 4, 1912).

RECTAL FEEDING BY DROP METHOD.

In a case of gastric ulcer with numerous hemorrhages and ulcerated hemorrhoids which bled profusely upon the first passage of the rectal tube, the author hit upon the plan of giving nutriment rectally by the drop method. The results were so satisfactory that he has since employed this procedure in over 150 cases. First such substances as broths, beef tea, meat juice, etc., were tried, and, when these were found to be well retained and absorbed, milk and eggs and other liquid foods were used. Few patients object to this method of feeding. Some have been able to retain 3 liters of milk and 8 to 10 eggs in twenty-four hours. Feeding egg and milk is a little more difficult than beef tea or milk alone, since milk and egg mixed tend to solidify if not kept warm. The author, when using such a mixture, therefore uses a double can, with an outlet below from the inner compartment; the milk and egg are placed in the latter, and are kept warm by water at 110° to 115° F. placed in the outer compartment. The remainder of the apparatus is the same as is used for saline enteroclysis.

The technique of the rectal feeding is as follows: First cleanse the rectum and colon with a warm normal saline solution. Elevate the head of the bed, and, after seeing that the nutriment is warmed to about body temperature, place it in the smaller can, surrounded by hot water. Regulate the flow to a drop a second and insert the nozzle into the rectum. About one to one and a half hours are required for 10 ounces of milk and 2 raw eggs to flow into the bowel.

The following nutrient enemata gave the best results: (*a*) White of 3 eggs; peptonized milk, 9 ounces (280 Gm.); table salt, q. s.; total, 264 calories. (*b*) Warm milk, 9 ounces; yolks of 2 eggs; grape-sugar, 1 dram (4 Gm.); table salt, ½ dram (2 Gm.); total, 310 calories. (*c*) Warm milk, 9 ounces; 2 raw eggs; table salt; essence of pepsin, 1 dram; total, 314 calories. (*d*) Two raw eggs; normal saline solution, 1 pint (500 Gm.); total, 140 calories.

The method was found valuable either as the sole or an auxiliary source of nutriment in acute gastric inflammations with persistent vomiting, recent hemorrhage, gastric hyperesthesia demanding local secretory rest, stenosis of the esophagus or pylorus, advanced gastric carcinoma, pernicious vomiting of pregnancy, etc. In wasting diseases in which the stomach was not able to re-

tain or receive the proper amount of food, *e.g.*, in pulmonary tuberculosis, chronic renal diseases, and heart diseases, the method proved very useful as an auxiliary to oral feeding. H. M. Eberhard (American Journal of Gastro-enterology, July, 1912).

SCIATICA, TREATMENT OF.

Good results in sciatica are reported by the author with the injection of large quantities of saline solution directly over or near the sciatic nerve,—a procedure introduced by Lange. Injection of salt solution is preferable to that of alcohol in these cases, as the latter would produce motor as well as sensory paralysis, and degeneration of the nerve.

During an injection the patient should lie on the abdomen with the legs fully extended and the feet projecting beyond the edge of the table. A firm pillow is placed under the lower abdomen to favor relaxation of the gluteal muscles. To locate the nerve a line is drawn from the sacrococcygeal articulation to the posteroexternal border of the great trochanter; at the junction of the inner third and outer two-thirds of this line is found the spine of the ischium, and 1 inch to the outer side of this point is the proper point of puncture. An area of skin about 4 cm. in diameter is then painted with iodine. The syringe used is all metal, holds 60 c.c., and has a slip tip which allows the needle to fit the barrel directly. The needle is of steel, 12 cm. long, with a caliber of 1.5 mm. and a sharp point, which is protected by a dull-tipped stylet projecting 1 mm. In puncturing the skin and subcutaneous tissue the stylet is withdrawn beyond the cutting edge. It is then replaced and the needle pushed in perpendicularly. When the nerve is reached, at a depth of from 6 to 12 cm., the patient may feel either a sharp pain radiating to the popliteal space or foot, or a sharp pain in the corresponding heel; or there may occur a jerking movement of the leg or a sudden twitch in the calf muscles. Some patients complain only of diffuse pain in the buttock. It is unnecessary and unsafe to penetrate the nerve-sheath. The stylet is then removed and, the syringe having been filled with sterile normal saline at 95° to 100° F., the fluid is slowly injected to the amount of 80 or 120 c.c. The needle is quickly withdrawn, the iodine washed off with alcohol, some collodion applied over the puncture, and this covered by a small strip of adhesive plaster.

The patient is then instructed to lie abed and rest for twelve to twenty-four hours. No anesthetic is required, but strict asepsis is absolutely essential. Soon after the injection some aching with heaviness and numbness in the limb usually appears for a short time. In some cases the sciatic pain in the thigh disappears within twenty-four hours, but there is still pain in the leg; the latter is often promptly relieved by an injection of 10 to 20 c.c. in the region of the peroneal nerve at the head of the fibula.

The interval between the initial and second injections will vary according to the relief obtained. The author waits thirty-six hours to one week. He has treated 25 patients with sciatica by the method, and administered over 60 injections, without meeting with any unpleasant symptoms. The results were as follows: 13 cured; 10 improved, most of them being enabled to resume their former occupations; 2 unimproved. One of the latter received only 1 injection, while the other was a case of tuberculous disease of the hip-joint. W.

M. Leszynsky (Medical Record, February 17, 1912).

SEBORRHEA, VACCINE TREATMENT OF.

Seborrhea of the scalp, the author remarks, is probably the commonest cause of baldness in men, though it is rare in women. The term seborrhea oleosa, or true seborrhea of the scalp, should be restricted to cases exhibiting, in addition to undue oiliness of the scalp, profuse hairfall and the presence in abundance of the Sabouraud microbacillus in the scrapings containing the contents of the scalp follicles. Only under these conditions is a grave prognosis justified. The bacilli are found by pressing the edge of a glass slide upon the surface of the scalp and pushing it firmly along. The oily contents of the follicles are thus readily expressed, and a simple methylene blue or Gram stain reveals the characteristic organism.

The author reports 7 cases in which acne bacillus vaccine was used. The dose varied from 75 to 300 million organisms, and the number of injections 4 to 16. In the first case, that of a young man, the success obtained was very gratifying, as advanced stages of the disease had hitherto been considered incurable, and the affection appears to be always steadily progressive in the male sex. In all the cases improvement of the greasiness was obtained; in some, complete return to normal.

The improvement is usually marked at first; then matters stand still for a time before final cure. In most cases the hairfall is markedly diminished; in those cases in which it continues, there is at the same time a growth of new downy hairs, so that the progressive baldness is arrested. A. F. Savill (Practitioner, September, 1912).

SYPHILIS, CONGENITAL, TREATMENT OF.

The use of the bichloride of mercury in the treatment of congenital syphilis is strongly recommended by the author. He prescribes it in an aqueous solution containing 1 grain (0.06 Gm.) to the ounce (30 c.c.), so that 1 drop of the fluid equals about $\frac{1}{500}$ grain of the drug. The watery solution is less apt to cause gastric disturbance than tinctures or syrups. The bichloride is preferred to all other mercury compounds because of its less tendency to cause loose stools; still, one is limited in the dosage of the bichloride to the amount which renders the stools too frequent. A decided tolerance for the drug can be established by very gradually increasing the dose. It may then, if desired, be dispensed in tablet form, but the tablet in all very young patients, and in many older ones, should be given in solution.

Ordinarily the treatment is conducted as follows: One drop of the bichloride solution is given 5 times a day ($\frac{1}{100}$ grain) after nursing, to any infant under 1 year of age. The day's total is then increased every second or third day by 1 drop, till 10 drops ($\frac{1}{50}$ grain) are being given. After this it may be prudent to increase the dose even more slowly than before. If the stools exceed 3 daily and are inclined to be thin, $\frac{1}{10}$-grain doses of Dover's powder or 3- to 5-drop doses of paregoric may be given 1 to 3 times a day, as required. It is very seldom necessary in order to control symptoms in infants under 1 year to increase the daily dose above $\frac{1}{30}$ grain (16 to 17 drops). Where it is necessary, because of looseness of the stools, recourse to inunctions should be had, 15 grains of the official unguentum hydrargyri being rubbed into alternating parts of the body each day, in conjunction with the bichloride given. With older chil-

dren, usually $\frac{1}{20}$ to $\frac{1}{16}$ grain of the bichloride can be given daily, which is generally sufficient to control symptoms.

When late or remote (tertiary) symptoms are encountered, the bichloride is generally given two weeks, after which it is omitted and a solution of potassium iodide given for one week, in solution, well diluted, after meals, in doses of from 3 to 15 grains three times daily.

Special attention in congenital syphilis must be given to diet and hygiene. To the older children, in addition to their specific medication, tincture of nux vomica, bitter wine of iron, and cod-liver oil with malt may be given in alternating short periods, say of five days each, where there is a need for tonics.

Treatment should be administered continuously for at least one year. During the second year two months' treatment should be followed by one month's intermission, given over to general tonic measures. In the third and fourth years two-month intervals can be taken. After four years of treatment, with all specific manifestations negative, and nutrition and general development normal, one month out of every six should be advised for a "specific tonic," this to be continued practically indefinitely. The "tonic" consists of from $\frac{1}{20}$ to $\frac{1}{12}$ grain of bichloride a day, to which may be added, if deemed expedient, 5 to 10 grains of potassium iodide three times a day. W. B. Hoag (American Journal of Dermatology, May, 1912).

TYPHOID FEVER, HEXAMETHYLENAMINE IN.

This agent was administered to typhoid patients first at the beginning of treatment, later in the amphibolic stage, and finally in the period of convalescence. Three doses, each of 0.5 Gm. (7½ grains), were given daily. The drug was well borne and the results appeared to confirm the views of Chauffard, who suggested the use of the drug in this disease. Hexamethylenamine is in large part excreted through the biliary passages, and the typhoid organism is very susceptible to its effects. Since these bacilli have a tendency to aggregate in the biliary apparatus and induce relapses by re-entering the alimentary tract during convalescence, the effort to antagonize them with hexamethylenamine would appear to be advisable. Malan (Gazzetta degli ospedali e delle cliniche, No. 31, 1912).

ULCERS OF STOMACH AND DUODENUM.

In an analysis of 1000 cases of gastric and duodenal ulcer, met with in a series of 12,598 patients suffering from various gastric disturbances, the author made the following observations: Of patients with gastric disorder, 7.8 per cent. were affected with ulcers. More than twice as many males suffered from ulcer as females. Anemia was present in a large proportion of cases. A history of over-indulgence in food or drink could be obtained in almost half the cases. The average duration of symptoms was twelve years. Normal gastric acidity occurred in 46 per cent. of the cases; hyperacidity in 30 per cent., and subacidity in 23 per cent. In recent ulcers and especially those with recent hemorrhage the acidity was found very high, while in chronic forms it was low.

The most prominent symptom, pain, occurred in 94 per cent. of cases, and was most frequent in cases with high acidity. It appeared sometimes immediately after the taking of food (gastric ulcer), and at times long after (duodenal ulcer). In many instances there

were one or more periods of intermission of pain as well as the other symptoms; these periods varied in duration from one to many months. An epigastric tender area was present in at least 90 per cent. of cases, a dorsal tender area in 32 per cent. Vomiting was a very prominent symptom, occurring in 67 per cent. Hematemesis occurred in 22 per cent. of cases and melena in 51 per cent. Occult blood was found in 81 per cent.

Of the 1000 cases, 52 per cent. were of duodenal ulcer, 40 per cent. of gastric ulcer, and the remainder undetermined.

Of the duodenal ulcer cases, 48 cases showed normal acidity, 35 per cent. hyperacidity, and 16 per cent. subacidity, hyperacidity being more frequently observed in males and subacidity in females. Pain was present in 96.5 per cent. of cases. Periods of intermission from symptoms were found exceedingly common. Epigastric tenderness occurred in 89 per cent.; a tender area to the right or left of the median line in 7 per cent. Vomiting occurred in 21 per cent., and was more frequent in the cases with high acidity. Melena occurred in 54 per cent., and occult blood was found in the stools in 83 per cent. of the duodenal ulcer cases.

As regards the results of treatment, 72 per cent. of cases of peptic ulcer treated by the Leube method were cured, 66 per cent. by the Lenhartz method, 47 per cent. by the ambulatory treatment with administration of silver nitrate, 50 per cent. with bismuth subnitrate, and 40 per cent. with olive oil. Of the cases treated by the Leube cure, 74 per cent. remained permanently well, as against 77 per cent. with the Lenhartz cure. Of cases operated on, 71 per cent. were cured, 91 per cent. remaining permanently well.

There can thus be no question, the author concludes, but that a large proportion of ulcer cases recover under medical treatment. The results of ambulatory treatment, however, are shown to be very unsatisfactory. Even a rest cure, if of but a few weeks, is often insufficient. In severe cases the patient should be put to bed for six or eight weeks or even more. The answer to the question whether the Leube or the Lenhartz treatment should be undertaken depends largely upon the patient and the severity of the symptoms. Quite satisfactory results are often obtained by the Leube cure, and at times, on account of the persistent nausea, vomiting, and pain, one is forced to follow this form of treatment. It is best when possible, however, to institute the Lenhartz treatment, for a restriction to liquid food is often unnecessary and usually results in great weakness and exhaustion.

Surgical intervention should only be considered if medical treatment has been persisted in sufficiently long and not found effectual; especially is it indicated in cases accompanied by severe and persistent pain, vomiting or hemorrhage, or in ulcers recurring notwithstanding thorough medical cure. It is indicated, too, in all pyloric or duodenal ulcers accompanied with stenosis. In ulcers situated elsewhere in the stomach, operation gives but slight relief unless radical procedures—resection or excision—are undertaken. Julius Friedenwald (American Journal of the Medical Sciences, August, 1912).

Clinical Summary

Practical hints from articles and abstracts that have appeared in the Monthly Cyclopedia and Medical Bulletin during the current year.

Acne. TREATMENT. Vaccines useful for selected cases: (1) Cases with deep-seated pustules, occupying a large area; micro-organisms abundant, staphylococcus greatly predominating. Autogenous staphylococcic vaccine most efficient, but must be administered over some months. (2) Cases with lesions indolent and superficial, chiefly inflamed comedones, with but little pustulation. Stock acne bacillus vaccine here gives good results in many instances. Administer 5 to 10 millions acne bacilli every week or ten days. (3) Cases combining the more and less severe lesions of the first and second groups. Use mixed vaccines of staphylococcus and acne bacillus. Other measures: Remove other etiological factors, such as reflex circulatory disturbance due to nervous strain in adolescence and digestive disorders. Correct constipation and regulate diet and mode of life. Locally, squeeze out comedones and wash often and vigorously with soap and water; if suppuration present, puncture or incise pustules, bathe with hot water, and dress antiseptically; disinfect skin and have garment worn next to affected part frequently changed; X-rays; radium for indurated nodules. *Morris and Dore.* Page 93

Acne Rosacea. TREATMENT. Where acne indurata associated, incise papules and pustules, scarify distended nasal capillaries, and apply Bier's cup for some time to individual lesions. Have patient apply hot compresses freely to face and at night following ointment: Salicylic acid, 0.6 (gr. x); precipitated sulphur, 4.0 (℥j); white petrolatum, 30.0 (℥j). *Aronstam.* 176

Actinomycosis. TREATMENT. Vaccine made from actinomycotic pus used in 8 cases, increasing from 0.1 to 0.75 c.c. per dose. Of 4 cases of actinomycosis of jaw and neck, 3 recovered and 1 was rapidly improving. In 1 of 2 abdominal cases, drainage of a large inguinal abscess followed by vaccine treatment for two months led to recovery. In other cases, results less satisfactory. *Kinnicutt and Mixter.* 533

Adenitis, Tuberculous. TREATMENT. Röntgen rays recommended for routine use in cases that do not readily respond to medical treatment. Give ten daily irradiations, then 2 or 3 times a week. Study of proper dosage in each case necessary. Patients thus treated early can be cured without breaking down of a single gland. Where such breaking down does occur, incise, swab out cavity with equal parts of iodine and phenol, and drain. *Boggs.* 229

Alopecia Areata. TREATMENT. In children keep hair very short; not necessarily in adults. Wash entire scalp weekly with tar soap. Every day rub in following stimulating preparation: Aquæ ammoniæ, gr. lxxv (5 Gm.); olei terebinthinæ rectificati, f3v (20 Gm.); spiritus camphoræ, f℥v (150 Gm.). Where seborrheic lesions simultaneously present, use following ointment: Balsami Peruviani, gr. xv (1 Gm.); sulphuris præcipitati, gr. xxx (2 Gm.); olei cadini, ♏lxxv (5 Gm.); olei amygdalæ expressi, f3vj (25 Gm.); olei theobromatis, 3iiss (10 Gm.). *Sabatié.* 534

Six obstinate cases treated with ultraviolet rays, and all cured after three weeks to thirteen months. Good reaction, with peeling of skin, followed exposures; the hyperemia induced, lasting a week or longer, was used as guide for time of succeeding exposures. *Harris.* 603

Anal Fissure. TREATMENT. Where merely a shallow, red, linear tear: (1) At first visit, cocainize fissure and dilate sphincters gently with fingers; lightly curette any unhealthy granulations present. (2) Regulate bowels by correcting diet, nightly injections of olive oil and, if necessary, cascara or compound licorice powder. (3) Anus to be bathed night and morning with warm water, and a sterile gauze dressing smeared with calomel or boric acid ointment—or, if pain very severe, cocaine or morphine (gr. v-x to ℥j)—applied. (4) At 4- or 5- day intervals, cocainize ulcer, stretch sphincters moderately, and apply ichthyol and glycerin, 15 per cent., or balsam of Peru, 20 per cent. in castor oil, upon cotton, to remain for several hours. Tuttle recommends application of pure ichthyol to fissure 2 or 3 times a week. In many cases not amenable to above palliative treatment excision is applicable: Infiltrate under and around fissure with 0.1 per cent. cocaine, seize small fold of skin at its lower angle, and excise ulcer with tissue forceps well up into anal canal. Where but moderate hypertrophy of sphincters, especially in children and the elderly, dilatation is the method of choice: some cases recur. Where marked sphincteric spasm, incision and division of external sphincter, under local anesthesia in majority of cases, always gives excellent results. *Hill.* 345

Some obscure cases of fissure, with dull pain beginning one or two hours after defecation and continuing sometimes whole day, found to originate in inflamed crypts of Morgagni opening high up in anal canal. Their excision necessary for cure (*v.* Hemorrhoids, Treatment). *Tuttle.* Page 537

Anemia. TREATMENT. To increase amount of iron in red cells, following suggested: Acidi citrici, 15 Gm. (3¾ drams); ferri

citratis solubilis, 4 Gm. (1 dram); aquæ, 120 Gm. (30 drams). One teaspoonful with water before meals and at bedtime. *Hemenway.* Page 417

Anemia, Pernicious. TREATMENT. Case in a pregnant woman at term in which 4 intragluteal injections of defibrinated human blood, amounting altogether to 159 c.c., proved markedly beneficial. *Esch.* 44

Apoplexy. TREATMENT. In thrombotic apoplexy early reduction of viscosity of blood by means of citric acid gave excellent results. *Hemenway.* 417

Appendicitis, Chronic. DIAGNOSIS. Pain chiefly in right lower quadrant, if unassociated with attacks of epigastric pain and nausea, is seldom due to appendix; before diagnosing chronic appendicitis exclude every other possible condition.

TREATMENT. Appendectomy alone frequently does not cure. This is true especially of patients with chronic constipation; a long, dilated cecum, with other evidences of enteroptosis, is usually present. *Stanton.* 33

Arthritis, Gonorrheal. TREATMENT. Intra-articular injections of iodine tincture, 5 Gm. on the average, used in many cases of various types, with considerable success. Increased swelling at first, then cessation of joint effusion, disappearance of pain, and return of motion. *Hildebrand.* 37

Arthritis, Rheumatoid. TREATMENT. 1. Liberal diet, including plenty of animal food. 2. Guaiacol carbonate in cachets; dose at first from 5 to 10 grains *t. i. d.*, to be increased by 1 to 2 grains each week up to 15 or 20 grains. If given long enough (at least twelve months) this will in many cases arrest disease, diminishing size of joints and permitting of increased movements; it relieves pain markedly. 3. Potassium iodide in 10-grain doses, combined with the guaiacol, increases benefit; its depressing effect to be counteracted by tonics. 4. Thyroid preparations are of value in early cases associated with Raynaud-like symptoms and cramps in extremities. 5. Hot baths, superheated air, or electric light; douche masssage; peat baths or brine baths. 6. Passive movements and massage. 7. Bier's hyperemia, where affected joints few. 8. Fibrolysin followed by massage, where joints more or less fixed owing to fibroid thickenings. 9. Irrigations of colon, where arthritis secondary to chronic colitis. *Luff.* 112

Thyroid preparations useful in many cases of long-standing osteoarthritis and chronic infectious arthritis, probably because of damage to the thyroid gland resulting from its hyperactivity attendant upon continued toxemia. Slow pulse an indication of thyroid failure; emaciation does not preclude it. Dosage of dried thyroid substance ranges from 1½ grains (0.1 Gm.) once daily up to 5 grains (0.3 Gm.) *t. i. d.* in distinct myxedema. Avoid causing headache, diarrhea, or reduction of blood-pressure, and intermit drug from time to time. Thyroid medication necessary for remainder of life where thyroid failure thoroughly established. *Midelton.* 236

Asthma, Bronchial. TREATMENT. Importance of chronic coprostasis and intestinal autointoxication in etiology of asthma shown. Necessity of bowel regulation in the treatment emphasized. *Ebstein.* 33

Calcium chloride internally found to exert a notable prophylactic action. After administration for three or four days of a tablespoonful of 5 per cent. calcium chloride in milk every two hours, paroxysms ceased, often not to return for several months. The drug should be continued for a week. No untoward effects. *Kayser.* 416

Management of asthma in children described: A. *During Intervals.*—1. Feet and legs to be always kept warm and dry, and chest and neck properly protected. 2. Low meat diet, with plenty of vegetable proteid, generally to be ordered. Where intestinal trouble, include green vegetables and fruit juices. 3. Upon first symptom of a cold, have child put to bed, and give liquid diet, an active cathartic, and hot drinks. 4. In obstinate cases: change of climate. 5. Where simple anemia present, or history of rheumatism, give appropriate treatment. 6. Have mother give daily exercises in deep breathing, with stress on complete expiration. 7. Have elastic binder, with shoulder straps, worn around chest, to exert slight pressure and aid expiration. 8. Where catarrhal bronchitis persists after acute paroxysms, give sodium bromide in doses of 2 to 4 grains (0.13 to 0.25 Gm.) 3 times daily after meals in essence of pepsin, for several weeks. If no nervous element present, give instead syrup of hydriodic acid in doses of 10 to 20 minims (0.6 to 0.12 c.c.).

B. *In Paroxysms.*—1. Room to be warm; ventilate from adjoining room. 2. Where tympanites, give warm enema. 3. If paroxysm soon after hearty meal, give emetic. 4. Specific remedies, each relieving certain cases: Epinephrin, 3 to 5 minims (0.2 to 0.3 c.c.) of 1:1000 solution hypodermically; morphine sulphate, $\frac{1}{30}$ grain (0.002 Gm.); chloral hydrate in 3-grain (0.2 Gm.) doses; inhalations of nascent oxygen. 5. Where cough and wheezing after paroxysm relieved, give heroine in syrup of hypophosphites; a single dose of antipyrin at bedtime; croup-kettle treatment, using 30 minims each of creosote and oil of eucalyptus to a pint of water, employed with croup tent one-half hour at a time two or three times daily; or similar inhalations of lime water. 6. Give much general care as to diet, elimination, and covering until cough relieved. *McClanahan.* 479

Blepharitis. TREATMENT. Marginal blepharitis in children to be treated as follows: 1. Remove crusts 2 or 3 times daily with sodium bicarbonate solution (gr. x to f℥j) or, at first, with warm olive oil. 2. After care-

ful washing rub into roots of lashes a stimulating mercurial ointment (gr. viij of ammoniated mercury or gr. iv of yellow oxide of mercury to ʒj of white petrolatum). 3. If much discharge, especially purulent, cutting of lashes will facilitate cleansing, in worst cases, epilate all lashes involved in pustules. 4. If lid much excoriated, paint 1 per cent. silver nitrate solution on surface daily. 5. Keep lids closed with wet carbolic dressing (1 to 80) for a few days in severe cases, removing it *t. i. d.* to cleanse lids; avoid entrance of solution into eye. 6. Keep child from reinfecting lids with fingers by use of lightly smoked, domed protecting spectacles, or in the very young by cardboard splints bandaged on flexor surface of elbows. 7. Prescribe correcting glasses if required, to remove cause of ocular hyperemia. *Lawson.*
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Bronchitis, Acute. TREATMENT. In strong children, in second stage of diffuse acute bronchitis or in bronchopneumonia, with many râles and "choked-up" condition, following measures recommended: (1) ½ to 2 teaspoonfuls of castor oil, given within one to one and one-half hours. (2) 30 drops of ipecac and 15 minims of wine of antimony every hour until emesis occurs, not exceeding 3 doses. (3) Tincture of belladonna in 5-minim doses every four hours, gradually increased to 15 or 20 minims, and aromatic spirit of ammonia, 5 or 10 minims. (4) Every other hour, inhalations of the following: Oil of eucalyptus, 4 drams (16 c.c.); beechwood creosote, 4 drams; oil of turpentine, enough to make 4 ounces (120 c.c.). Add from 1 to 2 tablespoonfuls to 1 quart of water, which is kept boiling in room for one-half to one hour. (5) Keep diet low. (6) Combat fever and other symptoms on general principles. (7) For stimulation: Strychnine, quinine, and alcohol. *Lowenburg.* 545

Hexamethylenamine used in 22 cases with good results. Dose, 10 grains (0.6 Gm.) three times daily for three days, then twice daily till cough subsides. Other measures: Rest in bed as long as fever present; exclusion of meats and pastry from diet; good ventilation; calomel and soda, followed by magnesium sulphate. Results: Free secretion promptly established; every case well in from four to five days. *Eisenberg.* 606

Burns. TREATMENT. Dry open-air treatment of extensive burns recommended. After thorough cleansing with soap and water and gasoline (under anesthesia, if necessary), dust burn lightly with zinc stearate powder. Give morphine to relieve pain. Once daily remove all heavy crusts, wipe off exudate with dry sponges, and dust on thin coating of powder. Never allow exudate to accumulate under crust over twenty-four hours. Success of treatment lies in constant absolute exposure of the burn. *Jack.* 346

Callosities. TREATMENT. Apply 40 per cent. formaldehyde solution with brush 3 times daily for several days, or until surface becomes sensitive. Then allow parts to dry, when by soaking epidermis with warm water it can be rubbed off. Repeat process till cure effected. *Hammond.* 539

Carbuncle. TREATMENT. Use of precipitated sulphur, applied as powder into points of suppuration or ulceration or as ointment with cocoa-butter base (1 to 8), advised. Constant application of compress wet with solution of calcium creosote equally efficacious. *Kolipinski.* 463

Carcinoma. TREATMENT. Case of skin carcinoma reported in which local use of 1: 1000 epinephrin solution appeared to cause disappearance of growth. Solution either painted freely over tumor or applied in wet dressing. Tumor gradually replaced at its periphery by healthy tissue. Six years elapsed without recurrence. *Ritchie.* 480

Internal use, in daily doses of 0.4 to 0.6 Gm. (6 to 9 minims), of a 1:1000 solution of oxidized pyrogallol in 2 per cent. sodium carbonate found useful, causing improvement in general condition and increased appetite. *Von Stein.* 611

Carcinoma, Esophageal. DIAGNOSIS. Progressive retrofixation of tongue found an early and characteristic sign of cancer of upper third of esophagus. Protrusion to any marked extent is painful, and traction elicits resistance. *Guarnaccia.* 606

Cellulitis. TREATMENT. In cellulitis of hand: Apply Bier bandage and treat pain with hot dressings of saline solution. If pain not relieved, reapply bandage several times; if this still ineffective, make incision or incisions into the part, apply bandage again, continue hot dressings, and have hand placed in bath of hot saline thrice daily. Give iron and arsenic, prepare and inject a vaccine, and administer an antitoxic serum, particularly in early stages. Continue Bier's bandage after cellulitis has subsided and prescribe active movements and electric stimulation of muscles. X-rays often useful to cause deep hyperemia and promote removal of inflammatory products. Massage and passive movements after all inflammation gone. *Corner.* 346

Cholelithiasis. TREATMENT. Sodium salicylate, with or without extract of belladonna, found valuable in drug treatment. Its chief influence is upon inflammatory symptoms. Best results seen in acute and chronic cholecystitis, especially with simultaneous rest in bed and application of hot compresses. In such cases, give 2 to 4 times a day a powder of sodium salicylate, 0.5 Gm. (7½ grains), and extract of belladonna, 0.01 to 0.02 Gm. (⅛ to ¼ grain), dissolved in warm water. In severe cases of biliary colic with constant pain and high fever, calomel, 0.06 Gm. (1 grain) every hour for first 3 to 5 doses, then every two hours until first typical calomel stool appears, not exceeding 8 doses

a day, often gives striking results. All patients should drink in bed about an hour before breakfast 1 to 2 tumblers of hot water; also a tumbler before retiring, and smaller quantities frequently during the day. Where chronic jaundice, gastric atony or dilatation, or intestinal catarrh, rectal injections of water, especially Carlsbad sprudel at 40 to 50° C., very useful. Dietetic Treatment: At least 5 small meals a day; food to be taken minced or as purée; very cold foods and drinks to be avoided. After each biliary attack, patient should be kept in bed several days. Physical exercise, including deep-breathing exercises, important in cases free of colic and local tenderness for some time. *Mayer.* Page 535

Cholera Infantum. TREATMENT. For vomiting: Restriction to hot water, *ad libitum;* mustard poultice (1 part to 5 or 6 of linseed meal) to epigastrium; later, teaspoonful of iced white-wine whey every twenty minutes or half-hour, which may then be taken from bottle if well borne, and even a little fresh cream added. If vomiting obstinate: Washing out stomach, $\frac{1}{12}$ grain (0.005 Gm.) of calomel every half-hour, alternated, if necessary, with draught containing $\frac{1}{6}$ minim (0.01 c.c.) of creosote and $\frac{1}{2}$ minim (0.03 c.c.) of iodine tincture in 1 dram (4 c.c.) of camphor water. To stimulate renal activity, if but little sickness present: 15 to 20 drops of nitrous ether every few hours in water. Where any sign of exhaustion: Warm mustard bath for five to ten minutes, followed by ingestion of 10 to 30 drops brandy in hot water (to be repeated until warmth of limbs restored); strychnine hypodermically, with 3 or 4 drops of ether; quiet and horizontal posture. For intestinal condition, give following every four hours to six months' child: Bismuthi subcarbonatis, gr. x (0.6 Gm.); sodii salicylatis, gr. j (0.06 Gm.); glycerini, ♏ xv (1 c.c.); aquæ, q. s. ad f3j (4 c.c.). For fever, give enemas of water at 80° F.; 5 or 10 ounces of normal saline may be used or 2 ounces given into loose tissue of back. Where case seen early, before exhaustion has set in, disorder may sometimes be arrested with small doses of morphine sulphate hypodermically: $\frac{1}{30}$ grain (0.002 Gm.) combined with 5 or 6 drops of ether, for child 1 year old; this may be repeated in an hour. Energetic stimulation should follow, and extremities be kept warm. *Eustace Smith.* 542

Chorea. TREATMENT. Ethyl carbamate (urethane) gave favorable results. *Bertling.* 490

Clavicle, Fracture of. TREATMENT. Dressing of heavy moleskin plaster devised to avoid skin irritation of zinc oxide plaster and prevent looseness of dressing requiring reapplication. Warm a piece of moleskin 4 or 5 inches wide by 18 long, loop it about humerus high up in axilla, join its ends, and insert eyelets in them for lacing. Place a second strip around healthy side of body and adapt its posterior end for lacing with humeral loop, thus drawing shoulder of injured side back. Next place piece of moleskin 7 x 10 inches over healthy shoulder as a cap, and insert eyelets in free ends anteriorly and posterior. Pass a long strip 3 inches wide around forearm of injured side close to elbow, and connect ends in front of and behind body by laces with shoulder cap on healthy side, thus providing for elevation of injured shoulder. By tightening one lacing more than other, elbow may be brought forward or back as desired. Wait till adhesive well secured to skin before tightening laces. *Collins.* 347

Colitis, Mucous. TREATMENT. Apply to abdomen at night towel soaked in magnesium sulphate solution, ½ ounce to 1 pint of water, at 75° F. Irrigate rectum with 2 gallons of same solution at 85° to 90° F. Mucus disappears, and pain and gas formation diminish. Milk diet, with fruit, especially grapes, added, also effective; 1½ quarts of milk to be taken during day and 1 pint of hot milk at bedtime; continue for ten days to two weeks. Crude tar of *Pinus palustris*, mixed with flour and ordered in No. 2 gelatin capsules, gave good results; 2 or 3 capsules one hour after meals. *Joseph.* 42

Calumba-agar, containing solid constituents of 2 c.c. of fl. ext. calumbæ in 1 Gm. of agar, found useful in colitis with mucus in stools (*v.* Constipation). *Einhorn.* 231

Conjunctivitis, Gonorrheal. TREATMENT. Fifteen severe cases treated by local application of steam, to kill gonococci. As soon as eyelids can be everted—iced compresses having been applied—conjunctival sac is syringed with potassium permanganate solution, dried with gauze, and treated with steam, neighboring skin being protected with linen or wet gauze. Where chemosis marked, ocular conjunctiva is also steamed, care being taken to avoid cornea. Ten patients with corneas uninvolved rapidly and completely recovered, discharge early ceasing; in the 5 other cases conjunctivitis was cured, together with, in 1 instance, cornea. Steam treatment considered superior to silver nitrate. *Goldzieher.* 419

Constipation. TREATMENT. Hormonal, 20 c.c. injected intravenously or intramuscularly, found effective in constipation with general atony and in postoperative paresis. *Hoxie.* 170

Medicated agars considered useful. Phenolphthalein-agar, containing 0.03 Gm. of phenolphthalein in 1 Gm. of agar, and rhubarb-agar, containing 1 c.c. of fl. ext. rhei in 1 Gm. of agar, recommended. Prepared by dissolving remedy in boiling agar water solution, thoroughly mixing, evaporating to the original dry agar volume, and grinding up into flakes. Dose, 1 teaspoonful twice daily in water after meals. *Einhorn.* 231

Constipation with Diarrhea. Found in gouty patients, after abdominal and rectal

operations, in pulmonary tuberculosis, in achylia gastrica, and in hypochlorhydria with gastrointestinal atony.

TREATMENT. A few (3 to 5) 2- to 5- grain doses of calomel, followed by magnesium sulphate, or sodium sulphate, or a laxative water; in other cases, castor oil in ½- to 1-dram doses 2 or 3 times daily, continued for a month. Ichthyol valuable in cases with much fermentation. Physical treatment with oil or oil-emulsion enemas, hot baths with massage, or hot wet packs changed every 15 to 30 minutes. Rest in bed. Gastric lavage. Well-prepared food. Strong, black coffee with plenty of sugar often useful; also good beer or cream; bread spread with butter and honey; stewed or dried fruit (latter soaked in water); cheese; agar-agar, etc. Modest exercise alternating with rest; salt baths, sitz baths; sensible wearing apparel; correctly fitted corset. *Bernheim.* Page 69

Convulsions, Infantile. TREATMENT. Ethyl carbamate (urethane) found effective in infantile convulsions due to gastrointestinal or brain disturbances, as well as in nervous excitement and pain due to injuries or disease. Dosage: 0.5 to 1 Gm. (7½ to 15 grains) in infants less than 1 year old; 2 Gm. (30 grains) in those 1 to 2 years old. May be easily given either by mouth or rectum. No untoward effects ever noted. *Bertling.* 490

Corneal Opacity. TREATMENT. "Pressure inunction" of 30 grains (2 Gm.) of calomel in 1 ounce (32 Gm.) of petrolatum advised. After free application of ointment to closed eyelids and in conjunctival sac, pad of absorbent cotton is placed over it and 3 or 4 turns of elastic flannel bandage then applied rather tightly. This is employed for two to three hours daily. Treatment to be persisted in for some months. Ointment may be strengthened or weakened according to tolerance. *Ryerson.* 484

Corneal Ulceration. TREATMENT. Large doses of pneumococcus serum brought about prompt cure in 70 per cent. of cases of pneumococcic corneal ulceration. *Gebb.* 426

Coryza, Acute. Aromatic spirit of ammonia and sweet spirit of niter recommended as best agents to "abort" a cold. *Beverley Robinson.* 47

Mixed stock vaccine composed of various strains of pneumococcus, 40,000,000; streptococcus, 30,000,000, and staphylococcus, 150,000,000, recommended in colds. Marked improvement usually apparent twelve to twenty-four hours after first inoculation. Repeat dose on second day, then, in prolonged cases, at three- to six- day intervals. Severe complications following colds prevented by vaccine treatment. In cases where catarrhal condition persists between acute attacks, *M. catarrhalis*, 100,000,000, should be substituted for staphylococcus in the vaccine. In some cases, dose has to be doubled. Inoculations made at four- to seven- day intervals for several months. *Sherman.* 291

Hexamethylenamine used in 12 cases with good results. Give calomel and soda in broken doses, followed by magnesium sulphate. Dose of hexamethylenamine, 10 grains (0.06 Gm.) in a half-glass of water three times on first day and twice on succeeding days. If given within twenty-four hours after onset, results are: Scantiness and early disappearance of discharge; "stuffiness" and headache relieved; complications such as laryngitis, bronchitis, and sinusitis avoided. *Eisenberg.* 606

Painting nasal mucous membrane with a 1:20,000 to 1:1000 solution of oxidized pyrogallol found to yield marked benefit, causing prompt contraction of turbinates. Good results also obtained in hypertrophic rhinitis, sinus suppurations, ozena, pharyngitis, laryngitis, otitis media, lupus, etc. *Von Stein.* 611

Diabetes Mellitus. TREATMENT. Sodium perborate, applied as a powder, usually twice daily, brought about rapid healing in 3 cases of diabetic gangrenous ulcers. *Herzfeld.* 167

Artificial milk, prepared as follows, advised in diabetes: 1 broken raw egg; 2 teaspoonfuls of malt extract; 4 teaspoonfuls of olive oil. Beat up in bowl for five minutes; add gradually while stirring 1 pint of drinking water; season with salt; in hot weather add crushed ice. Where patient constipated, has hemorrhoids, is obese, or has hepatic congestion, following purgative combination is valuable: Sodium phosphate and sulphate, of each, ℥iv; dissolve with shaking in quart of cold water. Dose, 1 wineglassful in a tumbler of cold water fifteen or twenty minutes before breakfast or supper. Somewhat milder, more pleasant, and gently antacid is the following: Sodium chloride, ℥iij; sodium bicarbonate, ℥iv; sodium sulphate, ℥iiiss; sodium phosphate, ℥iv. *Kolipinski.* 463

Rice found useful as carbohydrate element in antidiabetic diet in 19 cases. It is easily digestible and absorbable, and is peculiarly adapted to supply carbohydrates without any protein or mineral admixture of consequence, therefore facilitating calculation of albumin requirement and reduction of salts in diet. It may be incorporated with any suitable protein-fat combination, given for protracted periods, and prepared in different ways, avoiding monotony. Sixty Gm. of rice equal 250 Gm. of oats in antiacetonemic effect. Pronounced acidosis is often relieved by 100 Gm. of rice; glycosuria frequently shows simultaneous decline. *Stern.* 604

Diarrhea. TREATMENT. Special reference to diarrhea due to gastric anacidity, either functional, in achylia gastrica, in pernicious anemia, diabetes, or gastric carcinoma. Give diluted hydrochloric acid, 30 drops in glass of water one-half hour after meals, and repeat in half an hour. To stimulate gastric glands give strong meat broths as first course

of meals, preceded by full doses, up to 30 or 35 drops, of tincture of nux vomica. Foods to be well salted. Butter; milk, 3 pints, if possible, daily; if not well borne, lactic-acid-bacillus tablets. If there is associated visceroptosis or gastric motor insufficiency, have patient stay recumbent an hour after each meal. *Vander Hoof.* Page 605

Diarrhea, Infantile. TREATMENT. Soy flour useful in summer diarrhea and some forms of intestinal indigestion; given in form of dilute gruel with or without addition of barley flour and later condensed milk or cows' milk. One to 2 level tablespoonfuls of soy flour to the quart suffice at first; later increased to 4 spoonfuls. Soy-bean, barley, and condensed-milk mixtures useful where, cows' milk disagreeing, there is difficulty in finding food sufficiently nutritious for child. Orange juice advisable from time to time to prevent tendency to scurvy. *Ruhräh.* 52

Following combination recommended in the more severe forms of infantile diarrhea: Magnesii sulphatis, ʒj-ij (4.0-8.0 Gm.); mucilaginis acaciæ, fʒss (15 c.c.); phenylis salicylatis, gr. v-x (0.3-0.6 Gm.); glycerini, fʒiij (12 c.c.); aquæ chloroformi, q. s. ad fʒiij (90 c.c.). Give 1 teaspoonful every one, two or three hours, sleeping or waking, vomiting or not. Add glycerin when urine concentrated, or give a little sweet spirit of niter separately. Where the salol causes nausea and vomiting, omit it. Take character of stools as guide to frequency of administration: If blood in them does not diminish increase number of doses. Feed child with barley water and white of egg beaten up with an equal amount of water, or better, soda water. In serious cases peptonoids may be added though they sometimes disagree. Place pinch of pepsin scales on tongue after food. *Ellis.* 349

In summer diarrhea: 1. Enforce rest, preferably in open air. 2. For stimulation: Tincture of strophanthus, with or without brandy. 3. For sedation: Morphine and atropine. 4. For subnormal temperature: Hot baths (105° to 110° F.) lasting three to five minutes, repeated every half to one hour, as required. 5. For cold extremities: Local hot mustard bath for a few minutes, followed by application of hot bottles. 6. For hyperpyrexia: Wet sheet every half to one hour with water at 85° F. 7. In extreme cases: Rectal injection of hot coffee, brandy, or camphor, not repeated more than once; hot saline solution very slowly per rectum, after excessive peristalsis controlled. *Kerr.* 548

Diphtheria. TREATMENT. Case in which, after a cure with antitoxin, throat cultures showed abundant diphtheria bacilli three weeks after start of disease. Repeated applications to the throat of a dilute culture of *Staphylococcus pyogenes aureus*, made by inoculating 8 c.c. of bouillon with a loopful of a fresh agar growth of the coccus, led to disappearance of diphtheria organisms from throat, thus preventing the child from being a "diphtheria carrier." General condition markedly improved. No untoward effects. *Page.* 166

Dysentery, Amebic. TREATMENT. Hypodermic injections of emetine hydrobromide gave excellent results. Dose, 1/6 to 1/3 and even ½ grain (0.01 to 0.03 Gm.). No vomiting produced where ipecacuanha by mouth had done so. No ill effects. Drug can thus be given even where administration of ipecac by mouth impracticable. *Rogers.* 539

Eclampsia, Puerperal. TREATMENT. Citric acid found of great value in cases of threatened eclampsia, with marked edema and albuminuria. Following combination advised: Acidi citrici, 30 Gm. (7½ drams); liquoris sodii phosphatis comp., 80 Gm. (2½ ounces); water, 40 Gm. (10 drams); 1 dram in a full glass of water every three hours; later, twenty minutes before each meal and at bedtime. *Hemenway.* 417

Eczema. TREATMENT. Alcohol useful as antiparasitic and to relieve itching. Apply 90 per cent. alcohol twice daily to and around lesions before carrying out other local measures. Good results even in rebellious cases. Applicable in all forms of eczema except those with abundant watery discharge. Continue long after affection overcome, to prevent recurrence. *Monatsh. f. pr. Dermat.* 96

Local treatment with heated air employed in 35 cases of eczema in infants, with good results. Applications made once daily for five to ten minutes; affected region then covered with olive oil. Strict dietetic measures also to be enforced. *Perlmann.* 167

Venesection followed by injection of salt solution gave good results in certain cases of chronic eczema with itching in which other treatment, including X-rays, had failed. (V. Pruritus, Treatment.) *Simon.* 365

Eczema rubrum of lower extremities to be treated thus: Restrict intake of meats and sweets, interdict alcohol, cause bowels to move daily, and advise fresh air and at least eight hours' sleep. Locally, remove surgically any varices present, if situated above eczematous area. Then use rubber bandage. First apply ordinary lint around leg, with woolly side covered thickly with a salve and placed over diseased area. Then put on thin rubber bandage, about 3 inches wide and 5 yards long, from toes to knee, overlapping one-third of width, without reversing and leaving heel free. Maintain an even degree of pressure. At night remove bandage and dressing. Wash former in dilute phenol (3j-Oj) and draw through dry towel. Wash leg with weak phenol, dry with absorbent cotton, and apply an astringent cooling lotion twice at fifteen-minute intervals. Dress leg and reapply rubber bandage in morning. *Bechet.* 418

Epididymitis, Gonorrheal. TREATMENT. Where preliminary pain at external abdominal ring (vasitis), put patient to bed and support scrotum by strip of adhesive stretched

over anterior surfaces of thighs. For established epididymitis, support scrotum in same way, and apply to it following ointment: Mentholis, gr. xv (1 Gm.); ung. belladonnæ, gr. xx (1.3 Gm.); ung. Credé, gr. xxx (1.3 Gm.); ichthyolis, ʒj (4 Gm.); petrolati, q. s. ad ℥j (32 Gm.). If swelling of epididymis does not quickly resolve, strap testicle, as follows: Envelop affected half of scrotum in a square of gauze. Press testicle into bottom of scrotum with thumb and index finger and bind a strip of adhesive above organ, holding it down. Then pass other strips, starting at the first one, around under testicle and up the opposite side until organ is covered. Finally, secure with another transverse strip over the first. Support with suspensory. Renew strapping every other day. *Bethune.*
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Epilepsy. TREATMENT. (1) Secure bowel movements once or twice daily. (2) Have patient drink water freely. (3) Tepid sponge bathing or brief immersion baths followed by gentle rubbing. (4) Mild exercise in open air. (5) Mixed diet, consisting of vegetables and milk in liberal amount, and also white meats; starchy foods in limited quantity; normal amount of fats. Correct digestive difficulties. (6) Bromides to be used early in disease and in sufficient amount to control seizures. (7) Sodium chloride withdrawal found an aid to bromides, though prohibition of salt should not be so radical as to cause anorexia and loss of weight. (8) Combination of sodium glycerophosphate with bromides proves beneficial. (9) Thyroid extract valuable in epileptic children with arrest of development, as well as, occasionally, in other cases; to be given persistently, in small doses; after a time, it will be found bromides can be reduced or even for a while suspended. (10) Trial of pituitrin in epilepsy justifiable. (11) Symptoms prelimi: ıry to seizures, such as headache, depression, etc., indicate the prophylactic use of a saline purge, diminution of food, and increased bromide dosage. *Dercum.*
292

Operation justifiable: (*a*) In traumatic epilepsy with external evidence of injury; (*b*) *do.*, without evidence of injury when nature of attacks or symptoms immediately following injury indicates seat of lesion; (*c*) in Jacksonian epilepsy; (*d*) in general epilepsy where suggestion of a focal lesion may be found before or after attacks in some disturbance of motion, sensation, or reflexes. Gratifying results may be anticipated after operation in 10 to 25 per cent. of cases. *Frazier.*
293

Epistaxis. TREATMENT. Sodium perborate used with success to arrest hemorrhage in epistaxis and after adenoid operations or tonsillotomies. *Herzfeld.*
167

Erysipelas. TREATMENT. Solution of 20 drops of phenol in 25 Gm. (6 drams) of pure neutral glycerin recommended. It is painted over affected area and surrounding skin, but must not come in contact with mucous membranes. *Lodi.*
98

Solution of aluminum acetate recommended for local use in facial erysipelas (*v.* Furuncle). *Stansbury.*
227

Paint involved area in mild cases every hour with preparation of 15 minims (1 c.c.) of phenol and 1 ounce (30 c.c.) of turpentine oil. Treat severe, widespread cases with dressings soaked in mercury bichloride, or better, absolute alcohol, applied twice daily or oftener. Internally give 4 drams (15 c.c.) of camphor water three times daily, and by enema 15 grains (1 Gm.) of collargol twice daily. *Van Velzer.*
348

Esophageal Carcinoma. TREATMENT. Small amounts of hydrogen peroxide solution of 1 to 2 per cent. strength, sipped at intervals of an hour, facilitate descent of food, even in late cases where rectal feeding has been resorted to. *Liebermeister.*
98

Furuncle. TREATMENT. Seen early, a superficial furuncle may be aborted by inserting pointed matchstick, dipped in phenol, deeply into its center; if lesion deep, inject several drops of liquefied phenol at base of lesion. For a furuncle seen late in first stage: Scratch off central vesicle and apply a Bier cup. Dress with sterile gauze wrung from normal saline solution with 1 per cent. sodium citrate, after inserting a bit of rubber dam in opening if there be tension. Protect surrounding skin from citrate with ointment, and over citrate gauze apply waxed paper or oiled silk, covered by compress and bandage. Cupping and dressing may be repeated every four hours until slough loose, when latter is removed with small forceps. Apply citrate only three days. Also give citrate internally, 15 grains (1 Gm.) *t. i. d.* after meals. Where bluish, flabby granulations: Strap edges of wound with adhesive strips, dry granulations, mop with iodine tr., and dust with Bier's powdered silver nitrate. Snip off exuberant granulations. To promote epithelial regeneration, use 8 per cent. scarlet red ointment or amidoazotoluol. Prevent autoinoculation by shaving skin around furuncle and disinfecting with 70 per cent. alcohol, tincture of iodine with benzine, diluted liquor formaldehydi, or aluminum acetate solution. Repeat local disinfection with benzine at each dressing. Where furuncle first seen in stage of softening, incise and drain; latter may be assisted with a Bier cup. For very large lesions or in furuncles of face, inject 3 per cent. novocaine under base, wait five minutes, and remove core from tumor with small curette. Where supposed boils become carbuncles, excise the whole area, controlling bleeding with cautery and compresses, and apply pure liquefied phenol. For recurring furunculosis: Bacterin therapy with killed staphylococci; initial dose, 100 million bacteria, increased by weekly doses up to 1 billion. Yeast also useful. *Skillern.*
99

Venesection followed by injection of salt solution gave much benefit in furunculosis. (V. Pruritus, Treatment.) *Simon.* Page 365

Gastric Dilatation. DIAGNOSIS. Vomiting, abdominal pain, distention, constipation (occasionally diarrhea), collapse, splashing sounds, and peristaltic movement over stomach, appearing suddenly in the course of pneumonia, should at once suggest acute gastric dilatation.

TREATMENT. 1. Introduce stomach tube and practise lavage as often as distention occurs, even in cases with collapse. 2. Turn patient on right side or face. 3. Interdict food and drink by mouth. 4. Strychnine and eserine hypodermically apparently useful in some cases. *Fussell.* 107

Gastric Neuroses. TREATMENT. Condition nearly always associated with gastric atony and vertical "fish-hook" stomach. 1. Relief from pain (due to hyperacidity) obtained by recumbent position on right side or knee-chest posture for several minutes at short intervals after meals. 2. Peristalsis assisted by massage or having patient clasp left knee and make strong intermittent pressure of thigh against abdomen while lying halfway between prone and lateral position. 3. Helpful suggestion. 4. Abundant nourishment in small quantities at short intervals. 5. Attention to any existing anemia. Rational non-surgical treatment effective in majority of cases. *Greene.* 174

Fresh pineapple juice found useful to relieve anorexia. *Floersheim.* 233

Gastric Ulcer. DIAGNOSIS. Rice, milk, potatoes, and prunes cause positive reaction in benzidine test for occult blood in stomach contents, and hence must be excluded from diet before test is made. *Floersheim.* 105

Watermelon pulp found to cause positive reaction in guaiac-turpentine test for occult blood in feces. *Newbold.* 106

Gastritis. TREATMENT. In gastric catarrh with much mucus, citric acid often gives quick relief. Withhold carbohydrates from dietary where amylaceous dyspepsia coexists. In acute gastritis give sodium or potassium citrate and larger amounts of water. *Hemenway.* 417

Gonorrhea, Acute. TREATMENT. Method causing arrest of suppuration in three to five days described. Inject 5 to 15 c.c. (¼ to 4 drams) of 0.25 per cent. protargol solution into urethra every half-hour in daytime and every hour at night. To be retained two to ten minutes, during which time urethra is gently massaged from behind forward. Increase strength of solution gradually. Patient should ingest large amount of fluid, in order to be able to urinate before each injection. Continue injections, given as often as possible, two or three weeks after cessation of pus. Then alternate protargol with lead acetate and zinc sulphate, of each, 0.3 Gm. (2 grains) in 200 Gm. (4⅔ ounces) of water. *Kuhn.* 37

Necessity of early treatment emphasized. Inject slowly into urethra 1½ drams (6 c.c.) of 1:6 solution of argyrol, and have it retained for five minutes. Patient should then stay as long as possible without urinating. Physician is to give 2 injections daily, morning and evening, while in interval patient makes 2 injections of a 1:25 solution. Patients thus early treated cured in from two to five days. Continue strong injections until urethra dry and redness gone. Patient may then keep on injecting weak solution. *Minet.* 419

For young girls in whom speculum can be used semiweekly treatment, once with 25 per cent. silver nitrate applied to cervix and 10 per cent. to the vagina, followed by application of petrolatum, and once by 25 per cent. paste of iodoform in glycerin, gives best results. For little girls and virgins, local cleanliness and gonococcus vaccine best. In all cases with joint complications, vaccine of great value. *Morrow and Bridgman.* 540

Gonorrheal Cervicitis and Endometritis. TREATMENT. I. Acute cases: 1. Confinement to bed. 2. Keep emunctories active. 3. Limit diet. 4. Cleanse vagina frequently with large amounts of hot saline solution or hot water containing boric acid or a weak iodine solution. Use irrigator with nozzle projecting a straight forcible stream, and pinch mucous membrane of introitus around nozzle, to flush cavity satisfactorily. Intrauterine measures and pelvic operation intervention contraindicated. II. Subacute cases: 1. Soften and dilate cervix with Goelet's uterine electrodes and galvanic current. 2. Flush uterine cavity with hot iodine solution, 1 dram (4 c.c.) of the tincture to a quart of water, or silver nitrate, 1:5000. 3. As condition improves, substitute daily intrauterine injections of iodized phenol (equal parts of iodine tincture and phenol) or 1 per cent. silver nitrate. Use syringe with long pliable nozzle, with its tip wrapped with cotton; inject fluid into cotton and withdraw syringe. Insert iodine-glycerin tampon (1 dram to 4 ounces), which patient is to remove next morning. Remove cotton within uterus at next visit. III. Chronic cases: 1. Puncture, evacuate, and sterilize diseased Nabothian glands. 2. Touch opened glands and erosions about os with pure iodine tincture. 3. Intrauterine irrigations and injections as above, three times weekly. 4. Curettage of uterus, thoroughly scraping internal os and cervical canal, followed by swabbing with iodine tincture and appropriate after-treatment. *Dannreuther.* 100

Gout. TREATMENT. Radium emanations used in 400 cases of gout and chronic arthritis. Patient in closed radium room for 24 to 36 sittings of two hours each. Injections of soluble radium salts near involved joints given in addition; also superheated

air, electric light, and brine baths. Absolute rest in bed an adjuvant. Out of 50 cases in which blood was examined before and after treatment, uric acid disappeared in 37 instances, synchronously with marked amelioration. Cases in children particularly benefited, but cases of senile tuberculous and syphilitic arthritis and cases of very long standing, with marked joint changes, not suited for radium treatment. Low purin diet should also be tried for a few weeks or months; if ineffective, replace it by simple mixed diet, with as much of green vegetables and fruit as possible. *Gudzent.* Page 95

Combination of sodium citrate with salicylate recommended for gouty conditions (*v.* Rheumatism, Chronic). *Hemenway.* 417

Hay Fever. TREATMENT. Calcium creosote solution diluted with 8 to 10 parts of water recommended; throat and nasal fossæ to be sprayed every hour or two for two or three days. Potassium iodide, 5 grains *t. i. d.*, effective in hay asthma; arsenic may be added with advantage. *Kolipinski.* 77

Hemophilia. TREATMENT. Bleeding from wound in a hemophilic boy, previously uninfluenced by any remedial agent, checked by allowing blood from finger of a normal individual to drop on the wound. A clot formed immediately. *Sayer.* 168

Hemorrhoids. TREATMENT. Use of following preparations recommended: (*a*) Pulveris gallæ, zinci oxidi, ana 3j (4); hydrargyri chloridi mitis, 3ss (2); bismuthi subnitratis, 3j (4); cocainæ hydrochloridi, gr. v (0.3); unguenti aquæ rosæ, ℥j (30). (*b*) Pulveris gallæ, zinci oxidi, ana gr. v (0.3); morphinæ sulphatis, gr. ¼ (0.015); cocainæ hydrochloridi, gr. j (0.06); atropinæ sulphatis, gr. 1/60 (0.001); olei theobromatis, gr. xxv (1.6); ft. suppos. In external piles ointment is smeared within and around anus, and protected with cotton partially inserted therein; used three times daily. In internal piles, suppositories used, once or twice daily. Anus to be kept clean and constipation avoided. Inject 4 to 6 ounces of cold water in rectum several times daily. *Robinson.* 481

Inflammation of crypts of Morgagni or anal valves due to swelling of veins in rectal columns and lodging of fecal matter in crypts, is probably cause of "itching piles." Where small fissure exists between 2 piles it is nearly always connected with crypts, which must be laid open before complete cure possible. Only permanently successful procedure for cryptitis is to pass flexible bent probe with smooth, round head into depths of crypt and excise latter around it, through a Humphries speculum. Stretching of sphincter to be done only after crypts excised. Lay small strip of iodoform gauze into each tract left by excision and hold it in place by Lynch tube for forty-eight hours. Leave gauze until granulation well established, then induce its removal by gentle laxative. Dress parts with ointment of ichthyol, 5 per cent.; argyrol, 15 per cent., and anesthesin, 10 per cent. *Tuttle.* 537

Hepatic Affections. TREATMENT. Combination of sodium salicylate and sodium benzoate found useful for cholagogue and "flushing-out" effects in various disorders, especially suppurative angiocholitis, cholecystitis, and lithiasis. Sodium salicylate induces flow of concentrated bile; sodium benzoate, of dilute bile. Relative amounts of two salts to be varied according to indications. Formula suggested: Sodium benzoate, 0.75 Gm. (12 grains); sodium salicylate, 0.5 Gm. (8 grains); sodium borate, 0.25 Gm. (4 grains); rhubarb, 0.3 Gm. (5 grains); to be taken *t. i. d. Polain-Cartier.* 38

Hepatic Congestion. TREATMENT. Where due to heart disease: Venesection or cupping; drastic or saline cathartics. Patient to take only boiled water for six to twenty-four hours, then milk diluted with water, and finally milk alone, 1½ gradually increased to 2½ liters daily. Start digitalis simultaneously; continue its diuretic action with theobromine, 3 cachets of 0.5 Gm. (7½ grains) each daily. To improve hepatic function: Copious intestinal irrigations with cold boiled water, alkalies, saline purgatives, cholagogues in small doses, and tub baths, followed by general massage. Where liver sclerosed owing to cardiac trouble, alcohol and dietetic excesses to be forbidden. Ferments and intestinal antiseptics may be of great service. When cardiac weakness appears, digitalis may be replaced in these cases by following pill, to be taken 3 times daily: Extracti ergotæ, pulveris scillæ, of each, gr. iss (0.1 Gm.); hydrarg. chlor. mit., gr. ¾ (0.05 Gm.); pulveris digitalis, gr. ⅜ (0.025 Gm.). In simple hepatic hyperemia in an adult: Venesection, purgatives, hot iron. In true hepatic cirrhosis: Iodine and calomel, latter in doses of 1/6 to ⅓ grain (0.01 to 0.02 Gm.) every morning, together with hepatic substance. *Vires.* 540

Hernia, Inguinal. TREATMENT. In infants use truss; to be kept applied continuously. After two years, if hernia still persists, urge radical cure, if possible. *Campbell.* 169

Latent hernial sac frequently to be found on side opposite that operated. Should be searched for in all children and young adults, and, if present, ligated, thus insuring patient against possibility of a second operation. *Roughton.* 541

Hodgkin's Disease. TREATMENT. Röntgen rays cause prompt reduction of glands. Whenever recurrence is manifest, renew the treatment. External tumors can thus be controlled a long time, or until patients succumb to deep involvement. *Boggs.* 229

Hyperchlorhydria. TREATMENT. Rhubarb and soda, or rhubarb and magnesia, either in mistura rhei et sodæ or in Gregory's powder, useful in gastric disorders with fermentation or hyperacidity. *Beverley Robinson.* 47

Salt-poor diet, chiefly of albumins and fats, recommended. Cream to be taken, but not milk. Meat to be used only after softened by hanging and well pounded. Whenever heartburn appears, 1 or 2 raw eggs to be swallowed; soft-boiled eggs not so well borne. Light, salt-poor cheese especially recommendable. Foods made from flour to be restricted and taken only with eggs and much unsalted butter and rich cream. Vegetables to be scalded two or three times with water and latter then thoroughly poured off. Combat hyperacidity due to vagus excitation with pills of belladonna and valerian. For the overexcited mucosa give some astringent in tepid water half an hour before meals. To the very nervous administer also 45 to 60 grains (3 to 4 Gm.) of a bromide, for four to six weeks. Four or five meals to be taken daily, unless gastric atony or emaciation necessitate shorter intervals. *Ehrmann.*
Page 481

Hyperidrosis. TREATMENT. For sweating feet: Bathe them every night with 1 per cent. potassium permanganate solution and dry thoroughly. Next morning dust on following powder: Potass. permang., ʒij (8.0); alumin. pulv., gr. xx (1.25); talc. pulv., ʒj (32.0); zinci carbonat. et oxid., of each, ʒss (16.0); or else, have patient wear white stockings previously soaked in saturated boric acid solution. Where bromidrosis, use dilute formalin. For sweating in axillæ: Bathe with weak vinegar, and apply following powder on gauze pad: Acid. salicyl., gr. xx (1.25); amyli pulv., ʒij (8.0); alumin. pulv., q. s. ad ʒiss (48.0); or else, use following lotion: Betanaphtholis, ʒj (4.0); glycerini, ʒij (8.0); alcoholis, q. s. ad ʒiiss (80.0). Where persistent bromidrosis, short exposures to X-rays may be effective. *Meachen.* 177

Hyperthyroidism. DIAGNOSIS. Elevation of temperature found an early symptom in many cases, especially mild ones. When, in absence of acute or other tangible disease, there have been loss of weight and augmented nitrogen and phosphoric acid excretion, and when, after administration of a thyroid or iodine preparation, there occur the characteristic psychoneurotic and cardiac symptoms of excessive thyroid activity, elevation of temperature is a thyrotoxic phenomenon. *Stern.* 39

Hypothyroidism. DIAGNOSIS. Blood showing mild leucocytosis and relative lymphocytosis with eosinophilia from 3 per cent. up is highly suggestive of thyroid insufficiency. *Collins and Kaplan.* 40

Ileus. TREATMENT. Enterostomy performed in 20 cases in terminal stages of ileus, with result that only 16.6 per cent. died from the condition. Should preferably be done before intestinal paralysis is complete and abdominal muscles stretched beyond limit of tonicity. Lower ileum is seat of election for opening in gut; colon should not be used. Tube not less than 5/16 in. inside diameter should be used for drainage. *Taylor.* 397

Inertia, Uterine. TREATMENT. In secondary inertia and where pains ineffective owing to hydramnios or twin pregnancy, intramuscular injection of pituitary extract is indicated. May also be employed in febrile states. Where complications expected after birth, inject pituitary extract a few minutes before end of second stage. Where used in first stage, time to inject is when os is a little less than size of palm in primiparæ, and when it will just admit 2 fingers in multiparæ. *Jaeger.* 234

Influenza. TREATMENT. Following measures used with benefit in 8 cases: Diet; mild purge; acetphenetidin in moderate doses for pain; hexamethylenamine, 10 grains (0.6 Gm.) three times daily in water until temperature below 100° F. and symptoms much improved; then in half doses till temperature normal, and finally in one-third doses for a week. All patients well in five to seven days, without complications. *Eisenberg.* 606

Intertrigo. TREATMENT. In infants acute enterocolitis, frequently the cause of intertrigo through the irritating discharges, should be overcome by dieting: stop milk; give rice, arrowroot, or albumin water, with plenty of pure water to allay thirst. Internally, give sodium phosphate, 5 to 10 grains (0.3 to 0.6 Gm.) every morning for two or three days, usually followed by castor oil, 1 dram (4.0 c.c.). Locally, soak parts with oatmeal water. Give an oatmeal bath, by soaking bag filled with oatmeal in tub filled with boiling water for one-half hour, then allowing to cool to 100° F. and giving child hip bath. Then use following salve: Calamin and zinc oxide, of each, 3 parts; petrolatum, 50 parts. Dust parts with cornstarch or wheat flour. Use salve three times daily, previously cleansing parts with olive oil, if necessary. *Fischer.* 170

Intestinal Indigestion. TREATMENT. Pure cultures of *B. bulgaricus* used with benefit in cases of indigestion of putrefactive type with odorous stools and indicanuria. Dosage, for adults, 3 to 4 teaspoonfuls of liquid culture 2 or 3 times daily, preferably in sweetened water before meals. Antiseptics internally to be avoided during treatment. Diet: Meat and eggs in limited amount only, or at first prohibited entirely; give buttermilk and milk containing no preservative; fruits and sweets freely; fats, cream, butter, bacon and gelatin; vegetables, if starch digestion good; bread and cereals. *Harrington.* 351

Intestinal Paresis, Postoperative. TREATMENT. Pituitary extract used in 21 laparotomy cases. Dose, 16 minims (1 c.c.), commenced six hours after operation and repeated every few hours until 18 doses given. All patients passed flatus freely within a few hours, and were free of pain and distention. In all cases but 2, bowel action was obtained after a simple enema. Three intramuscular

injections of 1 c.c. each recommended during first twenty-four hours as routine practice in laparotomy cases. Pulse rate remains much lower than usual. *Bidwell.* Page 44

Ivy Poisoning. TREATMENT. Lead water and laudanum, with addition of ½ to 1 dram (2 to 4 c.c.) of sodium hyposulphite to the ounce, recommended as local application. Fluidextract of grindelia robusta, diluted with 10 to 15 parts of water and applied frequently or constantly with gauze, also often acts well. Where solutions applied on gauze, parts should be well cleansed and dressings changed daily. Internal use of small doses of tincture of rhus toxicodendron brings about immunity to poison ivy. *Attix.* 543

Jaundice, Catarrhal. TREATMENT. Cold injections of water or normal saline solution recommended, favoring biliary flow by promoting peristalsis. *Polain-Cartier.* 38

Laryngitis, Acute. TREATMENT. Freshly powdered cubeb, taken frequently and in moderate amount dry on tongue, found of service in acute throat disorders. *Beverley Robinson.* 47

Lichen Planus. TREATMENT. Tar emulsion baths found effective in a severe case: Oil of cade, 50 Gm. (1½ ounces); black soap, 25 Gm. (6 drams); water, 50 Gm. To be added to bath taken daily. *Balzer, Godlewski, and Condat.* 485

Lupus. TREATMENT. Pfannenstiel's method found useful in lupus of nasal mucous membranes. Give patient 45 grains (3 Gm.) of sodium iodide daily, divided into 6 doses. Every morning cleanse nasal cavity of crusts with nasal douche containing sodium chloride and boric acid, and, after drying, insert tampon of sterile gauze, in contact with affected parts. Have patient keep tampon constantly moist with 2 per cent. hydrogen peroxide solution. Free iodine is thus liberated from iodide excreted by nasal mucosa, exerting its effect on lesions. In early cases ulcerations heal in one to three weeks. *Sequeira.* 102

Mixture made by addition of solid carbon dioxide to ether or alcohol found valuable for superficial lesions. Far superior to solid CO_2 alone in that part under treatment is visible and, however irregular, can be exactly defined; in giving slightly less pain; in yielding much better cosmetic effect, and in requiring no special apparatus beyond cylinder of compressed liquid CO_2. Mixture is applied with camel's hair brush or cotton on wooden holder. If it is painted on continuously for about one minute, a bleb appears a few hours after; when this ruptures, superficial ulcer is left, which heals well under small doses of X-rays and mild antiseptic applications. *Sibley.* 603

Mastoiditis. DIAGNOSIS. A small mastoid process with thick outer cortex and small antrum is especially subject to "atypical" mastoiditis, condition escaping detection until serious complications appear. Suspicious symptoms in such cases are: 1. Discharge from ear more profuse than one would readily expect from middle ear alone and continuing profuse for two or three weeks. 2. Increased swelling of posterosuperior wall of external auditory canal. X-ray found useful for early diagnosis in a number of cases. *Goodall.* 11

Blurring of outline of tip of mastoid elicited by grasping both mastoids anteriorly and posteriorly between fingers and noting difference of definiteness of outline on the healthy and abnormal sides found valuable as corroborative evidence in early, doubtful cases of mastoiditis. Swelling from otitis externa may be confusing, but this is usually reduced in a few days by local treatment and ice-bag, while blurring of mastoid remains. *Alderton.* 104

Melæna Neonatorum. ETIOLOGY. Condition ascribed to oral infection: "mouth-cleansing" after birth considered inadvisable, giving chance for introduction of organisms. TREATMENT. Desperate case saved by injections of human blood-serum, doses of 20, 18, 10, 6, 18, 14, and 6 c.c. being given in four days. Method of securing serum was ordinary venesection (after careful skin cleansing), serum being allowed to separate spontaneously from clot in ¼-liter flasks. Injections made with antitoxin syringe anywhere from scapulæ to buttocks. *Nicholson.* 172

Myxedema. DIAGNOSIS. Where, in presence of puffy eyelids or dyspnea, physical examination does not yield evidence of renal or heart lesions, the existence of incipient or incomplete myxedema should be suspected. Therapeutic test—thyroid preparations in moderate dosage for a month—will confirm or disprove existence of hypothyroidism. *Butler.* 348

Nævus Pigmentosus. TREATMENT. Repeated application of formaldehyde recommended (*v.* Verruca, Treatment). *Hammond.* 539

Nasal Accessory Sinuses, Inflammation of. TREATMENT. In acute cases: 1. Calomel followed by a saline, then by diaphoresis with hot lemonade. 2. Liquid diet. 3. Acetylsalicylic acid or hexamethylenamine, to reduce suppuration. 4. Atropine sometimes valuable, but to be used with care. 5. Locally, application with cotton swab of 2 per cent. cocaine solution, followed by epinephrin, then by 4 per cent. antipyrin. Spray of epinephrin in alkaline medium every two or three hours. 6. After thorough contraction of mucosæ, clear opening of sinus or sinuses with swab and irrigate nose gently with warm saline solution containing a little sodium bicarbonate. 7. Oily spray of menthol and camphor. 8. Mild suction with exhaust bulb or Brawley apparatus. 9. Leucodescent lamp to relieve discomfort. 10. Hot applications. 11. Irrigation of sinuses (difficult, sometimes impossible without removal of bone). If condition unrelieved in a

few days, operation. In subacute cases, same treatment + autovaccines. Latter also useful to hasten recovery in acute cases. *Miller.* Page 173

Nephritis. TREATMENT. Mild forms of nephritis probably often recover after renal decapsulation (doubtless some of these would recover under medical measures). In a case of acute interstitial nephritis with miliary abscess formation, patient recovered apparently because of decapsulation and scarification of cortex. Patients with high-grade parenchymatous change may be given a respite for six months to several years, but their symptoms will probably eventually recur; in such cases, a secondary decapsulation is to be considered. In parenchymatous nephritis with marked general edema, relief is generally so transient as to make operation of questionable value. *Babcock.* 257

Following diet useful in protecting patient with early chronic interstitial nephritis from ultimate failure of circulatory balance: Breakfast: Large helpings of bulky fruits; an egg and 2 thin slices of bacon; a slice of bread, or an equivalent of toast, muffin, waffles, cereal, etc.; tea, cocoa, coffee, milk, water, or carbonated water. Luncheon: Large helping of some vegetable salad, with pickles, olives, or other relish; a moderate amount of cheese; breads and liquids as at breakfast. Dinner: Vegetable, milk, or cream soup; piece of meat, fowl, fish, or game, about 2 x 2 x ½ inch in size; gravies in moderation; freely of all kinds of succulent vegetables, though moderately of potato, rice and other starchy foods; breads and liquids as at breakfast; a simple dessert. Total of food taken should be smallest which will maintain nutrition at highest level, as judged by body weight and sense of well-being. Where tendency to increase of weight, reduce amount of bread, potato and other starchy foods, and *vice versâ*. Upon rising and two and one half or three hours after meals, a small glass of water or carbonated water should be taken. Moderate physical exercise desirable; if impossible, replace it by massage. Take body weight, measure all liquids taken and voided, and examine urine, weekly. Once in four weeks, give 2 freshly made 5-grain pills of mercurial mass every night for three days, followed the first time by ½ ounce of castor oil in morning, and the other two mornings by a saline. *Wells.* 354

Neurasthenia. TREATMENT. Measures found useful in certain forms described: 1. Where complaint of chilly sensations, cold hands and feet, lack of perspiration, irregular muscular pains, and physical inertia, without signs of heart weakness, ordinary treatment is greatly aided by small amounts of thyroid substance, 1 grain (0.06 Gm.) two or three times daily. Improvement in ten days; stop drug for a week, then resume, etc. 2. Where constant restlessness and activity, with sense of heat, bright eyes, shiny and moist skin, glossy hair, tremor, exaggerated knee-jerks, abnormal hunger, diarrhea and menstrual flow, and pulse 80 to 90, remedies such as belladonna, hydrastis, thyroidectin, ergot, and bromides, and ice applications to thyroid gland for half an hour three or four times daily, are likely to benefit. 3. Where patient abnormally fat, with constant gain in weight, lack of ambition, craving for sweets, and headaches, pituitary extract, or thyroid substance (1 or 2 grains a day), often does good. *Starr.* 609

Orchitis. TREATMENT. Case of unilateral orchitis, apparently originating by metastasis from primary foci in inflamed tonsils, in which hexamethylenamine in doses of 15 grains (1 Gm.) every six hours, later reduced to 5 grains (0.33 Gm.), brought about rapid improvement. *Prouty.* 544

Osteomalacia. TREATMENT. Daily doses of 3 to 5 dessertspoonfuls of a 0.01 per cent. solution of phosphorus in codliver oil, with rest in bed and baths as adjuvants, used with success in 6 cases of senile osteomalacia. *Reich.* 356

Otitis Media, Acute. TREATMENT. Relation of acute pharyngitis, nasal-sinus, middle-ear, and mastoid inflammations to an "active autotoxic state" of the system emphasized. Calomel in 1/10-grain (0.006 Gm.) doses, frequently repeated up to 1 or 1½ grains, found valuable to stimulate defensive powers of body and shorten convalescence. Used in combination with local treatment. Calomel, followed by castor oil or salines, given every other day. *Snow.* 42

Pain, Local. TREATMENT. Combination of menthol and methyl salicylate in hydrated wool-fat, covered with cotton and gauze bandage, recommended to relieve local pain where skin is intact. *Beverley Robinson.* 47

Paralysis, General. TREATMENT. Salvarsan administered intravenously in a case of paresis in maniacal stage, with marked improvement. *Holland.* 73

Two cases reported in which salvarsan was of distinct benefit. *Daland.* 298

Pharyngitis. TREATMENT. Where swollen lateral bands alone present, paint them with zinc chloride solution (gr. xv-f℥j) or touch with galvanocautery. "Nervous cough" is often kept up by swelling of the lateral bands; these should then be painted gently with deliquescent trichloracetic acid, followed by brushing with sodium carbonate. *Grant.* 363

Placenta Prævia. TREATMENT. Absolute quiet, rupture of membranes when required, and irrigation with hot water recommended. Water should be at 45° to 48° C. (113° to 118° F.), and at least 7 or 8 liters of it should be used. Repeat irrigation if necessary to check hemorrhage. Seventy cases thus treated without a death. Infection from tampon and mishaps in version or introduction of bag thereby avoided. When hemorrhage arrested, spontaneous expulsion of

fetus to be patiently awaited. Instrumental dilatation contraindicated. *De Boris.*
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Pleuritis. DIAGNOSIS. X-ray studies showed that location of fluid in chest in serofibrinous pleurisy depends upon the position assumed most constantly by patient during acute stage, and that exudates of this type are but slightly, if at all, mobile. These facts are of assistance in differentiation of serofibrinous from other varieties of effusion. *Engelbach and Carman.* 106

Pneumonia, Lobar. TREATMENT. Creosote inhalations and moderate bloodletting, especially with leeches, recommended. *Beverley Robinson.* 47

Stock pneumobacterins, in doses of 25 to 600 millions, used in 20 cases, with 15 per cent. mortality; 30 other similar cases, under usual methods of treatment, showed 40 per cent. mortality. In some of the cases, strikingly prompt benefit followed use of bacterins; in others results were less marked or *nil.* Results seemed more definite with the larger doses. Dosage can be adjusted according to clinical phenomena; where malaise, headache, chilliness, or definite rigors, with rise of temperature, follow an injection, it is unwise to increase dose. *Robertson and Illman.* 107

Intramuscular injections of quinine and urea hydrochloride used in 192 cases of lobar and lobular pneumonia; mortality 12 per cent. Initial dose, 15 to 25 grains (1 to 1.6 Gm.), repeated in three or four hours, and perhaps once or twice again in first twenty-four hours. Same plan on second day of treatment, and on third, if necessary. Smaller doses, 5 to 10 grains, then sometimes continued by mouth. Results: Temperature and pulse rate gradually fall, respiration more rapidly; termination by lysis in five to twelve days. Procedure in injecting: Paint skin with iodine tincture, fill syringe with 50 per cent. solution of the quinine salt in sterile water; inject deeply into a muscle, emptying syringe thoroughly; withdraw needle, and seal puncture with collodion; no local ill results. Additional treatment: The usual hygienic and drug measures; saline infusion; sodium bicarbonate or ammonium compounds in sufficient amount to keep urine alkaline; tincture of ferric chloride when quinine withdrawn. *Solis-Cohen.* 235

In cases with blood-pressure below 110 mm. Hg and other symptoms of vasomotor paresis present (pulse soft, cyanosis not prominent, extremities warm), epinephrin in 10-minim (0.6 c.c.) doses of 1: 1000 solution should be given intramuscularly, even before signs of pulmonary edema appear. If latter develops suddenly, give 15-minim (1 c.c.) doses every twenty minutes for 4 to 6 doses or until the symptoms are controlled; repeat series of injections later if required. In pulmonary edema accompanying dilatation of heart due to toxic degeneration of muscle or added to the myocarditis of old persons, however, epinephrin will accentuate the dilatation, and is contraindicated. These cases are differentiated by fact that blood-pressure is high,—125 to 170 mm.,—cyanosis is marked from the start, extremities are cold, first heart-sound loses muscular quality, and pulse is small, of high tension, and irregular in frequency and size; physical examination may reveal cardiac enlargement, with descent of apex. *Brown.* 297

Camphor-oil injections used in 37 cases, with but 1 death. Ten c.c. of a 30 per cent. camphorated oil, injected hypodermically to each 100 pounds of body weight every eight to twelve hours, are harmless and materially assist in overcoming toxemia, especially if begun early. Sterilize oil in boiling-water bath, draw into sterile syringe, and inject, after iodine disinfection of skin, into outer aspect of thigh. In lean persons 20 c.c. may be injected in 1 place; in fat patients, in 2 places. *Seibert.* 545

Pneumoperitoneum. DIAGNOSIS. In presence of free gas in peritoneal cavity, there occurs a concentric diminution of area of hepatic dullness, *i.e.*, dullness disappears at same time from upper border of liver downward and from lower border of liver upward. In tympanites, on the other hand, liver dullness disappears from below upward only. This distinction found useful in early diagnosis of perforation in typhoid fever. *Berg.* 108

Pneumothorax. DIAGNOSIS. Positive coin test, displacement of heart, and, in right-sided cases, displacement of liver are the most important diagnostic signs, occurring in about 90 per cent. of cases. Succussion splash and metallic tinkle occur in 30 or 40 per cent. *Cruice.* 46

Poisoning by Acids. TREATMENT. Case of sulphuric acid poisoning reported in which, when patient comatose, intravenous injection of 300 c.c. of a 5 per cent. solution of sodium carbonate caused immediate return of consciousness. Ultimate recovery. *Marchand.* 357

Poliomyelitis, Acute. ETIOLOGY. Poliomyelitis is propagated by dust. Nasopharynx is probably point of entry. *Neustaedter and Thro.* 46

DIAGNOSIS. Lumbar puncture shown to be valuable in distinguishing poliomyelitis of meningeal type from acute cerebrospinal meningitis. Negativity of cerebrospinal fluid in poliomyelitis diagnostic; in meningitis, fluid shows marked turbidity, coarse clot formation, great excess of albumin, copious deposit of polymorphonuclear cells, and meningococci. *Forbes.* 46

Importance of thoroughly cleaning out alimentary canal at earliest period of disease emphasized; copious enemata high up found useful. Retention of urine may also require treatment with warm baths, hot com-

presses to abdomen, or, ultimately, catheterization. *Bogardus.* Page 175

TREATMENT. Following procedure carried out in 5 cases with good results: Thoroughly cleanse alimentary canal, bandage limb or limbs lightly with cotton to keep them warm, give stimulating liquid diet and strychnine in minute doses, and apply Bier cups intermittently to both sides of spine and directly over posterior process from sacrum to cervical region, for one hour daily. Continue this regularly until muscular soreness has disappeared and voluntary motion in affected muscles begins to return. Where treatment can be begun a day or two after initial attack, soreness diminishes about fourth day and motion returns slightly about tenth or twelfth day. Then start massage and gradually allow general diet. *McIlhenny.* 533

Postnasal Catarrh in Children. TREATMENT. If condition acute, paint throat several times daily with boroglyceride, or, in older children, spray with a ¼ grain to the ounce solution of tartrated antimony while patient inspires deeply. Later, add an equal amount of glycerite of tannin to the boroglyceride. Where painting throat resisted, instill into nostril several times daily, while child lies back with head on pillow, a solution of 5 to 10 grains of resorcin to the ounce of saline solution, 10 grains of boric acid to the ounce of water, or 15 grains of sodium bicarbonate to the ounce. As redness of pharynx fades, apply pure glycerite of tannin or a paint of 12 grains of iodine and 15 grains of potassium iodide to the ounce of glycerin, with 5 drops of oil of cinnamon or peppermint. After all redness gone, use an astringent iron paint of 1 dram of the stronger iron perchloride to an ounce of glycerin. For anorexia: an iron tonic; stay in country or at seaside. Keep child well protected from cold for some time after. *Eustace Smith.* 34

Postoperative Shock. PROPHYLAXIS. Subcutaneous injections of epinephrin, 0.0004 to 0.0006 Gm., given regularly, to all cases operated, at start of anesthesia. Regularizes narcosis and lessens or eliminates operative shock. Where a patient remains asthenic for a day after operation further injections of 0.0004 Gm. may be given with advantage. *Delbet, Herrenschmidt, and Beauvy.* 534

Pruritus. TREATMENT. Venesection to the extent of 100 or 200 c.c., followed by injection of 300 to 700 c.c. of 0.9 per cent. sterile salt solution through same cannula, found to relieve itching at once, with subsequent cure or marked improvement. Procedure repeated 3 to 6 or more times, at intervals of five or six days. No untoward effects. *Simon.* 365

Pruritus Ani. TREATMENT. Idiopathic pruritus ani believed to be caused by streptococcic infection of skin. In 8 cases treated with autogenous vaccines made from organisms on skin, results were excellent, itching disappearing or growing less after 4 or 5 injections. *Murray.* 359

Burrowing of crypts of Morgagni beneath anal mucocutaneous membrane found responsible for many cases of pruritus ani where local remedies and dietary failed. After excision of these tracts, condition disappeared (*v.* Hemorrhoids, Treatment). *Tuttle.* 537

Psoriasis. TREATMENT. Put patient in warm bath (98° F.), to which, if skin tender and irritated, chamomile and bran or washing soda are added. Rub skin slightly once or twice with green soap, wash off, and remove scales. Next wash with 1:1000 mercury bichloride, then tar skin well with: Olei rusci, olei fagi pinguis (fresh), of each, 20.0 (3v); alcoholis diluti, 10.0 (3iiss). Patient then remains in bath twenty to thirty minutes, after which tar is washed off and affected parts treated with: Acidi salicylici, 1.0 (gr. xvj); sulphuris præcipitati, 4.0 (3j); zinci oxidi, amyli tritici, of each 1.0 (gr. xvj); petrolati, 25.0 (3vj). Dust talcum powder thickly over parts. Two days later, apply a 10 per cent. ointment of pyrogallol in hydrated wool-fat, followed by talcum, and after two days more, a 25 per cent. ointment of chrysarobin. For psoriasis of face, use following formula: Unguenti hydrargyri ammoniati, pyrogallolis, of each, 1.0 (gr. xvj); unguenti zinci benzoatis, q. s. ad 25.0 (3vj). For psoriasis of scalp, wash with 1:1000 mercury bichloride. Internally, give phenol and arsenic trioxide in separate pills, to be continued for a longer time than local treatment. Hygiene: Plenty of fresh air and rest. Bland diet, avoiding meat and alcohol, at least for a time. *Bernheim.* 327

Following preparation recommended for addition to baths given for removal of scales: Oil of cade, 50 Gm. (1½ ounces); black soap, 25 Gm. (6 drams); water, 50 Gm. Yolk of egg and a little fluidextract of quillaja may be added. Patient is to soak in bath and rub patches for ten or fifteen minutes. Chrysarobin, 2 Gm. (30 grains), or pyrogallol, 1 or 2 Gm., may also be used in the preparation. Patient is to apply petrolatum to patches in daytime, then take bath, and reapply petrolatum at night. For tar folliculitis, use methylene blue. *Balzer, Godlewski, and Condat.* 485

Psychoses. TREATMENT. Seven cases—4 in children—reported in which pronounced mental disturbances were shown due to dental impaction, alveolar abscess, or other conditions affecting teeth, and cure or great improvement resulted upon remedying these states. Importance of X-ray examination of teeth and jaws in psychoses emphasized. *Upson.* 129

Puerperal Sepsis. TREATMENT. Intravenous injections of mercury bichloride used in 11 cases, with 6 recoveries. Measure considered worthy of trial in severe cases. Twenty drops of a 1 per cent. solution injected once or twice daily; 1 to 4 grains of bichlo-

ride used during the treatment. Precautions necessary: 1. Teeth to be carefully cleansed. 2. Salines to be omitted during treatment. *Stowe.* Page 110

Outdoor treatment of severe puerperal infections found usually to bring about rapid improvement and to lower mortality by nearly 20 per cent. Sunlight as important as air. Patients kept out of doors on a wheel bed, to be moved in again when necessary. General condition strikingly well maintained in the prolonged pyrexias. Other measures: Iron, arsenic, strychnine, alcohol, fluids copiously by mouth, saline enteroclysis in severe cases, alcohol and cold sponge baths for pyrexia, hot or cold applications for abdominal pain and distention. Curettage contraindicated, increasing mortality 10 per cent.; local treatment to be limited to a single intrauterine douche of sterile salt solution. *Yaung and Williams.* 236

Pulmonary Abscess. TREATMENT. Inversion of patient found effective for evacuation of pus in a case of pulmonary and hepatic abscess; rapid recovery. Postural method suggested for trial in lung abscess and bronchiectasis before resort to surgery. *McKechnie.* 486

Quinsy. TREATMENT. Early probing advocated, in order to drain pus accumulation at its inception. With aid of reflected light and tongue depressor, tonsillar fossæ, especially upper ones, are entered in turn by means of a tonsil slitter or probe. Where bottom appears soft, rounded point of instrument is pushed deeper into tissues, capsule pierced, and peritonsillar space entered. The small amount of pus thus evacuated gives a sense of relief and infection stops. This can be carried out in about 8 out of 10 cases. It is practically painless and bloodless. *Schuster.* 360

Raynaud's Disease. TREATMENT. Apply liquid ichthyol in 10 per cent. strength locally. Internally, large doses of potassium iodide are very beneficial. Rest in bed and hot applications of some antiseptic solution to the affected members are useful. Where gangrene, amputation may be all that is necessary, but healing is tedious. *Beck.* 298

Renal Traumatism. TREATMENT. After crushing injuries of renal substance spontaneous repair is usual. Operation should not be done unless there is evidence of intraperitoneal leakage, progressive hemorrhage, urinary extravasation, or sepsis. *Babcock.* 257

Rheumatism, Acute Articular. TREATMENT. *Streptococcus pyogenes* vaccine used in 6 cases, in 4 of which no salicylates were given, with good results. Temperature quickly fell in every case, pain ceased, and inflammatory phenomena disappeared. Stock vaccine from several strains of streptococcus used in these cases, but author thinks it preferable to employ a mixed streptococcus and staphylococcus (*aureus* and *albus*) vaccine. *Wolverton.* 48

Rheumatism, Chronic. TREATMENT. In rheumatic conditions associated with anemia and in sore throat of rheumatic origin, following mixture recommended: Dissolve 1 dram (4 Gm.) of sodium salicylate in 2 ounces (60 c.c.) of water. Add liquor ferri perchloridi, plus an ounce of water, giving dark purple mixture. Then add 1 dram of potassium bicarbonate dissolved in 1 ounce of water, and fill up bottle to 8 ounces with water. *Drinkwater.* 51

Lime-poor diet found useful in certain forms of subacute and chronic arthritis, especially deforming arthritis, cases with joint pains following acute polyarthritis, and cases of chronic spinal ankylosis. Cases should be selected by test-diet, to make sure of calcium retention, as other patients will not respond to the treatment. Articles of food allowed in lime-poor diet: White or aleuronat bread, rice, tapioca, wheat flakes, sago, tomatoes, mushrooms, white of egg, meat bouillon, beef, calves' liver, tongue, sweets, vegetable fats, light beer, carbonated waters, port. Distilled water to be used in preparation of food. After six or eight weeks restrictions may be somewhat relaxed. *Hirschberg.* 110

Combination of sodium citrate with salicylate recommended: Sodii citratis, 30 Gm. (7½ drams); sodii salicylatis, 20 Gm. (5 drams); aquæ, 120 Gm. (30 drams); one teaspoonful in a cup of hot water half-hour before each meal and at bedtime. *Hemenway.* 417

Rhinitis, Chronic. TREATMENT. To clear and moisten nasal passage, following formula useful: Sodium chloride and salicylate, of each, 45 grains (3 Gm.); sodium borate and potassium chlorate, of each, 96 grains (6.5 Gm.); glycerin, 1 dram (4 c.c.); water, 6 ounces (200 c.c.). Two teaspoonfuls of this are to be added to 1 ounce of warm water and used to spray or sniff up nostrils occasionally. When fetor present: Phenol, 1 grain (0.06 Gm.); sodium bicarbonate, 4 grains (0.24 Gm.); warm water, 1 ounce (32 c.c.). To dissolve away purulent discharges: Sodium sulphate, 20 grains (1.3 Gm.) to the ounce. Where recurrent catarrh due to intranasal irregularities, remove latter. If surgery inadequate, use vaccines, and if sinusitis present wash out sinus daily for a week with a warm antiseptic solution. Where discharge accumulates in nasopharynx, use mixture of menthol, 10 grains (0.6 Gm.), and spirits of wine, 1 dram (4 c.c.) to 1 ounce (30 c.c.) of water, 1 dram of which is placed in ¾ pint of nearly boiling water and the vapor inhaled through mouth and exhaled through nose for ten minutes every two hours. Discharge may be thinned and partially removed by sniffing up nostrils a warm antiseptic alkaline lotion, after which an ointment of menthol, 4 grains (0.25 Gm.), and eucalyptol, 20 minims (1.25 c.c.), to 1 ounce (32 Gm.) of yellow petrolatum may be used. *Stuart-Low.* 422

Rhus Poisoning. TREATMENT. Alumi-

num acetate solution recommended for local application (*v.* Furuncle). *Stansbury.* Page 227

Salpingitis. TREATMENT. Forcible intrauterine injection of iodine advocated in conservative treatment of subacute salpingitis or small pustules. After gentle dilatation of cervix, a 2-ounce glass syringe with conical nozzle is filled one-half with diluted iodine tincture (25 per cent.) and uterine cavity filled and distended with all force syringe will permit, for about two minutes. Iodine reaches every irregularity of uterine cavity as well as, usually, mucosa of tubes. Abdomen is then opened, excess of iodine sponged away, or, if tube evidently not entered by it, injection made to distend tube strongly. Next any removal of tissue necessary is carried out, though conservation is the chief aim. Tube is to be attached lightly to upper border of broad ligament, to prevent descent. No pain or untoward results produced. *Stone.* 613

Scarlet Fever. DIAGNOSIS. Usefulness of Pastia's sign emphasized. Consists in a deep-rose-colored, linear exanthema in skin folds of anterior aspect of elbow. Lines usually 2 to 4 in number; can be caused to stand out in contrast by exerting gentle pressure on skin, then quickly removing it; occasionally visible in other flexures. Sign uniformly present in 73 cases, appearing with rash and generally lasting two or three weeks longer than rash. Occurs in other diseases only in such cases as can easily be differentiated from scarlatina. In 6 cases of latter with atypical rash, the sign led to proper diagnosis. *Taubles.* 612

Sciatica. TREATMENT. Where acute attack, in spite of the usual measures, persists longer than ten to fourteen days, sulphur baths or hot carbon dioxide baths (102.7° to 104° F., and lasting twenty minutes) should be employed, or heat applied in other ways. If ineffective, author counsels treatment by injections of saline solution and air: 1. Injection of 800 to 1000 c.c. of air, filtered through cotton, under skin on outer aspect of leg. 2. Injection of 60 to 80 c.c. of 0.8 per cent. salt solution, with 0.01 to 0.02 Gm. of novocaine added, just below sacrosciatic notch, as close to nerve as possible. 3. Injection of 10 to 20 c.c. of salt solution, with 0.01 Gm. of novocaine into epidural space of inferior lumbar region, needle being passed in and up through coccygeal notch; preliminary anesthesia of course of injection with novocaine. 4. Where very severe pain and contractures of lumbar muscles, injection of 10 to 15 c.c. of salt solution between third and fourth lumbar vertebræ into epidural space. Injections to be repeated at intervals of three or four days, substituting 1 to 1.2 per cent. for 0.8 per cent. saline. Two to five series of injections cure obstinate cases. *Sicard.* 114

Semilunar Cartilage of Knee, Dislocation of. TREATMENT. Mold piece of sole leather 4 inches long and 1¾ inches wide to inner side of knee, first soaking it in water and cutting edges smooth. Fasten over the displaced cartilage by adhesive straps—2 vertical, 1 horizontal, and 1 oblique—and cover with fairly firm bandage. Patient may walk as usual, notwithstanding soreness. Bandage renewed every ten days. After 3 such treatments condition is well, an aseptic adhesive inflammation having taken place, and only a bandage need be used. *Chandler.* 171

Sinuses. TREATMENT. Following paste used with success in treating a discharging sinus in a breast cancer, after Beck's paste had failed: Bismuth subnitrate, 30 Gm. (1 ounce); petrolatum, 60 Gm. (2 ounces); white wax and paraffin, of each, 5 Gm. (80 grains), and iodine tincture, 2 Gm. (30 minims). The tincture is added after other ingredients mixed. Paste to be stirred when used. Where large amount to be employed, diminish proportion of iodine. *Green.* 177

Sinusitis, Chronic. TREATMENT. Case of chronic frontal sinusitis with recurring severe pain at root of nose in which giving of hexamethylenamine, 4 grains (0.25 Gm.) three times daily for a month, brought relief from pain. *Eisenberg.* 606

Small-pox. TREATMENT. Mixture of 10 per cent. iodine and 90 per cent. glycerin painted over pustules 2 or 3 times daily in 85 cases; caused drying of lesions and arrest of tissue destruction, and prevented pockmarks. Pustules on face may be opened with sterile instrument and touched with iodine tincture. Desquamation frequently almost completed in four to six days. All cases recovered. *Rockhill.* 115

Splanchnoptosis. TREATMENT. Simple method of supporting viscera described: Shave hair from lower abdomen; place strip of zinc oxide adhesive plaster 2 to 2½ inches wide by 5 to 6 inches long across extreme lower abdomen; attach to each end of it a bandage of same width to reach around body above iliac crest and be fastened behind; have bandage well padded with cotton. Avoid skin irritation by plaster by removing it occasionally, cleansing skin, and using a dusting powder. Improve general and local muscular tone by means of massage, electricity, treatment of gastrointestinal tract, correct living, and suitable diet. *McCaskey.* 238

Syphilis. TREATMENT. Salvarsan given intravenously in 10 pregnant women in doses of 0.5 Gm. and subcutaneously in 8 newborn infants in doses of 0.03 Gm. Injections in women in dose mentioned found to be not without danger to fetus, pronounced weakening in heart-sounds being noted in days succeeding injection in one-half the cases. Child of a mother given first injection of salvarsan five and one-half months before parturition was born healthy; a child born seventy-two days after salvarsan injection was syphilitic. In the new born, salvarsan was

found to act promptly on pemphigus and to cause disappearance of spirochetæ from lesions; it is capable of producing prompt and lasting recovery from hydrocephalus of syphilitic origin. Smaller doses now advocated by author: 0.2 Gm. for pregnant women, repeated in six days; 0.01 for newborn infants, repeated twice or thrice at six-day intervals. *Bar.* Page 49

Sodium cacodylate used in 43 cases, each patient receiving 14 to 16 injections on successive days. Fresh solution of the drug, 1 in 15 of distilled water prepared daily. Injections at first subcutaneous, then intramuscular. Dosage: 3 grains daily, increased as results noted up to 5 or 6 grains. No untoward effects except, rarely, slight muscular pains or spasm. Conclusion reached: Drug useful in syphilis, giving results not unlike those of salvarsan, though less rapid. Best effects in early syphilis, on initial lesion, maculoroseolar or papular eruption, mucous patches and condylomata; also has an excellent alterative effect. Place patient on mercury immediately after course of cacodylate injections ended. *Spivak.* 362

Best results are obtained by use of salvarsan followed by mercury. Give repeated doses of former, to prevent relapses, making 3 or 4 injections at intervals of about eight weeks, unless relapse occurs earlier, when an injection should be given at once. Exception to this rule should be made where Wassermann is repeatedly negative after first or second injection of salvarsan, and all symptoms have disappeared. Salvarsan does not produce strains of spirochetes resistant to itself, as formerly supposed. *Anders.* 385

Rectal administration of salvarsan considered useful as substitute for intravenous or subcutaneous methods in cachectic cases or those with cardiovascular lesions. Suppositories of cocoa butter containing 0.1 Gm. of drug used. Introduced in late afternoon, suppository is absorbed by next morning. Slight local irritation for two or three hours induced; may be prevented by adding a little cocaine to suppository. To adults, 0.6 Gm. altogether is given, 1 suppository being used every week for six weeks. *Bagrow.* 488

Following plan of using neosalvarsan advised: In primary syphilis, 2 initial intravenous doses generally given, followed by third at interval of four weeks. In secondary stage: 3 injections at first, with a fourth eight weeks later. In tertiary stage: Continue treatment every two months after initial course until negative Wassermann obtained. Used intramuscularly, neosalvarsan is absorbed much more rapidly than salvarsan. *McIntosh, Fildes, and Parker.* 608

Tabes Dorsalis. TREATMENT. Salvarsan administered intravenously in 4 cases, along with hydrotherapeutic measures, with striking improvement. *Holland.* 73

Two cases reported, under treatment for over a year, in which lancinating pains were controlled, muscular inco-ordination improved, and Wassermann reaction became negative. *Daland.* 298

Tachycardia, Paroxysmal. TREATMENT. Attack of tachycardia in a woman relieved as follows: Patient being seated, physician's right hand was placed flat over heart, left hand on back, and patient directed to take deep breath, close glottis, and fix strongly walls of chest. Chest walls were then squeezed with some force, attempting to exert pressure on upper part of heart. Immediate relief and fall of pulse rate from 220 to 110. *Rich.* 233

Tapeworm. DIAGNOSIS. Deep pétrissage of abdomen recommended as aid to diagnosis of tapeworm. Series of circular movements executed by hand in direction of large intestine with enough energy to cause thorough kneading of abdominal contents. Procedure harmless and reveals worms sometimes when purgatives have failed. Three or four fifteen-minute applications of deep pétrissage generally required. Administration of purgatives in cases where contraindicated thus avoided. *Cyriax.* 426

Tetanus. TREATMENT. Phenol injections used in 5 consecutive cases, all recovering; 2 other cases treated with antitoxin died. Ten minims of 10 per cent. solution of pure phenol in sterile water, diluted to 30 or 40 minims, injected deep into muscles, at first every three hours, later at longer intervals as improvement appeared. Injections made into buttocks, deltoids, or pectorals. No untoward results. Urine, however, should be watched for smoky color, as a precaution. Severity of convulsions always diminished by the treatment, sometimes after third or fourth dose. In fully developed cases, second dose to be given one hour after first. Original wound to be excised or cauterized, as usual, with strong solutions of phenol, silver nitrate, or nitric acid. *Kintzing.* 115

Use of intravenous phenol injections, beginning with 2 to 3 grains (0.13 to 0.195 Gm.) two or three times daily, and rapidly increasing up to 5 grains (0.325 Gm.), advocated. Employ 1 or 2 per cent. solution of phenol. Watch urine throughout. *Bernart.* 615

Tetany. TREATMENT. Removal of whey from food given to infants with tetany found advantageous. Suspension of curds of wheyless milk proved useful as food. Best prepared as follows: Bring milk to a boil, then cool to 107° F. Add chymogen, 1 dram to the quart, and keep at 107° for half an hour. Strain through cheesecloth and allow to drain an hour. Finally, put curds through fine-meshed sieve, and suspend in a solution of arrowroot flour (1 level tablespoonful to the quart). *Grulee.* 230

Tonsillitis, Acute. TREATMENT. Tincture of iodine applied locally in 400 cases in children, with unusually prompt cures. Also used in pharyngitis, otitis media, tonsillar and nasal diphtheria, laryngitis, stomatitis

etc. For a milder application deep down in throat or in nose, equal parts glycerin and iodine tincture is satisfactory. In acute contagious diseases applications of iodine tincture to throat are of prophylactic value, combating spread of infection. *Sill.* Page 171

Brushing with 10 per cent. menthol and 3 or 4 per cent. guaiacol in olive oil often has good effect. *Grant.* 363

Following measures advised: 1. Reduction of fluids to minimum. 2. Calomel in ⅛ to ¼ grain (0.008 to 0.016 Gm.) tablets every half-hour till 2 grains taken or bowels well moved. 3. Hot mustard foot bath (1 heaping tablespoonful to pail of hot water); wrap patient in blanket and put to bed. 4. Light diet, omitting meat. 5. Quinine bisulphate, 2 grains (0.12 Gm.), with Dover's powder, 5 to 10 grains (0.3 to 0.6 Gm.), night and morning. 6. To combat exacerbations of systemic reaction: 1 or 2 drops (0.05 or 0.1 c.c.) of pure phenol, stirred in ¼ glassful of cold water, internally 2 to 8 times daily. 7. Mild gargle and spray to cleanse throat. 8. Wipe over tonsils once every one to three days with tannic acid, 1, in glycerin, 4, or tincture of ferric chloride, 1, in glycerin, 5. 9. Throat lozenges, 6 to 8 daily, with guaiacum, 1 or 2 grains (0.06 to 0.12 Gm.), or made up with camphor and menthol, of each, 1/10 grain (0.006 Gm.), and cocaine hydrochloride, 1/32 grain (0.002 Gm.). 10. Cracked ice sucked to relieve thirst and lessen inflammation. 11. Ointment or hot poultice under angles of jaw for glandular swelling and pain. 12. Where marked obstruction to breathing, linear slash with guarded bistoury through bulging tonsil. *Griffith.* 550

Trachoma. TREATMENT. Subconjunctival injections of diphtheria antitoxin used in 50 patients, 30 being practically cured and 20 greatly improved. After turning lids, eyes first washed with boric acid and saline solutions, then 1 c.c. fresh antitoxin injected in each lid from within outward. Lids then returned to normal position and another cubic centimeter injected under skin and muscle of upper lid. Inflammatory reaction for thirty-six hours, then disappearance of granules. Three or four such treatments given successively. *Pachopos.* 178

Tuberculosis. TREATMENT. Tuberculin applied locally in 10 cases, comprising suppurative cervical adenitis, anal fistula, and sinuses, with early cures in previously rebellious cases. Parts first irrigated with salt solution, then tuberculin solution sprayed on, or, in sinuses, introduced with syringe and flexible cannula. Mouth of sinus sealed with collodion for several hours. Initial dose must be small; later dose is carefully increased, avoiding general reaction. Locally there is pronounced reaction at first, then stimulation of processes of repair. *Beasley.* 56

Tuberculosis, Laryngeal. TREATMENT. Yeo's continuous respirator will check cough in this condition. Preparation generally used: Creosote, 3iij (12.0); spirit of chloroform, oil of Pinus sylvestris, of each, 3iss (6.0); oil of cinnamon, oil of citronella, of each, ♏v (0.3); menthol, gr. v-x (0.3-0.6). *Grant.* 363

Tuberculosis, Pulmonary. DIAGNOSIS. Hemoptysis occurring without warning in young adults, and unassociated with further signs or symptoms of tuberculosis, is probably of tuberculous origin and should be so treated. Hemoptysis in pneumonia, bronchitis, asthma, or following trauma should lead to suspicion of an underlying tuberculous process. *Bartlett.* 101

TREATMENT. Citrate of iron hypodermically found very efficient in relieving the secondary anemia in 257 cases, 70 per cent. of which were advanced or far advanced cases. Employed routinely where reduction in hemoglobin greater than 10 per cent. Dose, 0.05 Gm. (5/6 grain), injected in buttock. Italian preparations found least irritating. Maximum benefit attained after 30 to 40 consecutive daily doses. *Bullock and Peters.* 32

Comparative study of 146 cases receiving tuberculin and 234 treated by hygienic-dietetic method alone. Conclusion reached that tuberculin is valuable in tuberculosis, especially in moderately advanced cases, and is of special value as a protection against relapse. Autogenous vaccines used in 75 other cases; temperature rapidly returned to normal, expectoration diminished, and hemorrhage was rare. *Petit.* 57

Creosote carbonate, 10 grains in capsules every three or four hours, used with satisfaction in cases of tuberculosis with sudden symptoms of pneumococcic infection (shown by malaise, moderate rise of temperature, followed by bloody sputum and preponderance of pneumococci in saliva). *F. N. Robinson.* 152

Treatment of cough discussed. Facilitate early morning cough with glass of hot water or milk with or without 1 dram of whiskey or brandy, 5 or 10 grains of sodium bicarbonate, or a little Saratoga Vichy. For irritative cough, avoid sources of irritation, such as rapid talking, laughing, smoke, etc.; control the desire to cough. Deep-breathing exercises, change of position in bed, sucking ice, sipping orange juice, demulcent lozenges. Where pharyngeal irritation, use slightly astringent lozenges: Ext. grameriæ, potassii chloratis, ana gr. xv (1); olei menth. pip., ♏j-ij (0.06-0.12); ext. glycyrrhizæ puri, 3iiss (10); ft. in trochiscos no. xxx. Steam inhalations, with 3j-ij of cpd. tr. of benzoin or oil of pine to a pitcher of hot water. Where bronchial secretions abundant: Inhalation from perforated zinc mask (Robinson's inhaler) of 10 drops of equal parts of alcohol, creosote, and chloroform. For pharyngeal irritation, also try sprays of 1 per cent. menthol or pine oil in benzoinol or albolene, or a mixture of equal parts of menthol, camphor, and eucalyptol in 100 parts of benzoinol. For

night cough: Warm drink before retiring; warming the bed; cross binder, above and below shoulders and across chest and back, previously dipped in cold water (60° F.) and covered with similar dry cross binder and a flannel jacket; renew in three hours or leave on all night. Strapping chest, where pleurisy. Sometimes counterirritation with iodine tincture or blisters over the apices or other site of irritation. For nervous cough: Bromides in 10- to 20- grain doses, chloral hydrate in 5-grain doses, or a combination of the two. Where wheezing and much secretion: Belladonna tincture, 10 to 20 minims, or atropine sulphate, gr. $\frac{1}{100}$ to $\frac{1}{50}$. Codeine, gr. $\frac{1}{12}$ at first, then $\frac{1}{8}$ or $\frac{1}{4}$ every two hours; heroine, in smaller doses; finally morphine, $\frac{1}{24}$ grain, increased if necessary. For abundant expectoration: Respiratory exercises, change in position, cross binder, and especially creosote inhalation and atropine. *Mcara.* Page 239

Typhoid Fever. DIAGNOSIS. Early recognition of perforation facilitated by observation of concentric diminution of liver dullness. (See Pneumoperitoneum.) *Berg.* 108

Careful, repeated leucocyte counts claimed to afford earliest reliable means of typhoid diagnosis for general practitioner. Characteristic leucocytic picture: 1. Leucopenia, progressive, very likely preceded by slight leucocytosis. 2. Initial moderate polynucleosis, lasting first four to eight days. 3. Progressive, marked lymphocytosis, displacing polynucleosis and lasting well into recovery. 4. Increase in large mononuclears, beginning with onset of disease. 5. Sudden, early, and complete disappearance of eosinophiles. *Hultgen.* 116

New test for typhoid fever described: With fine hypodermic needle inject a few drops of suspension of dead typhoid bacilli, made by taking 1 drop of 1000 million vaccine and mixing it thoroughly with 20 drops of sterile saline solution. Inject intradermally and as superficially as possible. Typhoid patient shows absolutely no reaction, while non-typhoid patient shows an area of well-marked redness disappearing forty-eight hours after injection. *Prendergast.* 300

TREATMENT. Ipecac used in 6 cases with good results. In every case but 1 patient became afebrile within four days. Dose in the earlier cases, 30 grains (2 Gm.) on first evening, diminished daily by 5 grains down to 10 grains (0.65 Gm.); in other cases, 10 grains morning and evening, later decreased to 10 grains once daily; drug was given in salol-coated pills, preceded by tincture of opium to prevent vomiting. *Frazier.* 103

Lumbar puncture twice performed in a case with intense, persistent headache, second puncture bringing relief. *Oddo and Monges.* 178

Inoculation with typhoid vaccine considered a valuable measure, after experience with 50 cases. Best dosage, 50 to 100 or 150 millions every third day. Notable absence of severe complications and of tendency to relapse. Stock vaccine best. *Leishman.* 554

Where cold sponge baths fail to lower temperature, cold colonic flushing often effective. Use small colon tube, inserted just through the sphincter muscle. Pass 1 to 3 pints of water at 40° to 50° F. in small quantities into colon, and allow to return through tube. Repeat every four to six hours if temperature rises and is not reduced by sponging. *Penoyer.* 551

Ulcer, Rodent. TREATMENT. Mixture of solid carbon dioxide and ether or alcohol found valuable for local application. (See Lupus.) *Sibley.* 663

Uncinariasis. TREATMENT. Beta-naphthol in 3 doses of 30 grains each at intervals of two hours, followed, again in two hours, by 6 drams of magnesium sulphate, found to expel 97.52 per cent. of total number of hookworms present. Thymol, in same dose, expelled 97.87 per cent., but caused serious constitutional disturbance. A 60-grain beta-naphthol treatment expelled 86 per cent. It was given as follows: Beta-naphthol, 4 drams (16); mucilage of tragacanth, 1 ounce (32); peppermint water, to make 6 ounces (192). *Nicol.* 230

Uremia. DIAGNOSIS. Depression of reflexes and positive Babinski phenomenon found valuable as a very early indication of oncoming uremia. Present in the stage of "preuremia." *Curschmann.* 48

Urethritis. DIAGNOSIS. Improved method of differentiating anterior from posterior urethritis described. Slowly inject 1 c.c. of 0.5 per cent. aqueous solution of basic fuchsin into anterior urethra and have it retained one-half to one minute, with slight massage. Allow fluid to escape and have patient urinate in 2 high glasses. If only stained shreds are present, there is no posterior urethritis; if only white, unstained shreds, infection is in posterior urethra; if both stained and unstained, process is both anterior and posterior. *Wolff.* 118

Urethritis due in about 5 per cent. of cases to *Micrococcus catarrhalis.* These cocci more rounded than gonococci; more of them extracellular; best differentiated by culture. Condition always subacute at first; symptoms mild, but rapidly intensify under frequent urethral injections. Period of incubation important: Often only one day, or else more than ten days; where three to ten days, probably gonococcic.

TREATMENT. Mild measures only. Sandalwood oil cures mild cases in week to ten days. In more severe forms, mild astringent often needed. In 1 case, weak organic silver solution found beneficial. *Ayres.* 551

Urticaria. TREATMENT. Venesection followed by injection of salt solution proved useful in some cases. (V. Pruritus, Treatment.) *Simon.* 365

Vaccination Site. TREATMENT. Picric acid applied to vaccinal lesion in 22 children, to harden tissues and prevent local infection. Four per cent. solution in 95 per cent. alcohol painted over and around vaccinal site forty-eight hours after vaccination and daily thereafter. Inflammatory reaction and constitu- with success of vaccination. *Schamberg and Kolmer.* Page 118

Varicose Ulcers. TREATMENT. Stimulate granulations with silver nitrate (30 grains to the ounce), cover ulcer with sterile gauze, and apply long adhesive straps to skin on either side of lesion till skin well wrinkled. Have foot elevated on pillows till it returns to normal size. Change adhesive straps upon alternate days or oftener. Massage and attention to bowels. Linen elastic stockings, put on over white stockings to absorb perspiration, after ulcer cured. *Gills.* 178

Following method found effective in healing ulcers resistant to other forms of treatment: Place patient under deep anesthesia; remove all crusts surrounding ulcer; pour on tincture of green soap and sterile water, and scrub the ulcer with an ordinary stiff brush, previously thoroughly sterilized. Continue scrubbing, washing off *débris* with clean water, until base of ulcer is smooth and edges stand out clearly, red and hard. Paint ulcer and immediate vicinity with tincture of iodine, and apply wet boric or bichloride dressing. Pain generally complained of after recovery from anesthetic, but if bandage is kept moist with warm solution it soon ceases. Granulation soon sets in at many places, and repair is rapid and satisfactory. *Beck.* 300

Following procedure advocated: 1. Place limb on inclined plane at 45°. 2. Cleanse ulcer and cover with gauze. 3. Exert strong pressure on limb by applying an elastic bandage from toes to knee, causing ischemia; remove bandage immediately after. 4. Apply suitable remedial preparations to ulcer and dress, with elastic stocking over all. Patient may walk at once. Method to be used only where no acute inflammation present. Results also good where eczema present. *Stephan.* 616

Verruca. TREATMENT. Use of 40 per cent. formaldehyde recommended. To be applied to lesion every three to six hours for two or three days, by means of wooden toothpick or matchstick. Care to be taken not to touch normal skin. Growths desiccate and exfoliate in several days to a week. If dermal layer still not free from blemish, another application or two secure desired results. Where open sore produced, use healing ointment of zinc oxide or simple cerate. *Hammond.* 539

Mixture of solid carbon dioxide and ether or alcohol found valuable for local application (see Lupus.) *Sibley.* 693

Vincent's Angina. DIAGNOSIS. Signs distinguishing it from lacunar tonsillitis are: 1. Absence of fever. 2. Pain more localized on affected side, and is severe, lancinating. 3. General malaise and physical exhaustion very marked.

TREATMENT. First perform gentle curettage of the tonsillar crypt involved. Then apply 12 per cent. silver nitrate solution. *Wherry.* 58

Salvarsan used locally, first in solution, then in powder, in a severe and obstinate case; prompt recovery. *Achard and Flandin.* 118

Vomiting of Pregnancy. TREATMENT. 1. Magnesium carbonate, 2 drams; magnesium sulphate, 1 ounce; mint water (1:40), 1 ounce; water, to make 8 ounces; wineglassful to be taken early in the morning. Cascara given daily in small doses for two or three weeks. 2. Simple diet; evening meal to consist only of thin porridge, gruel, or arrowroot. Koumiss; champagne, ½ hour before a meal. 3. Where relief from nausea only obtained after complete evacuation, encourage latter by the sipping of warm water. 4. Absolute recumbency in severe cases. 5. Drugs: Effervescing mixtures, salicin emulsion, phenyl salicylate, compound tincture of cardamom in dram doses, antipyrin or acetanilide with sodium bromide, small chloral and potassium bromide enemata, wine of ipecac in hourly minim doses; validol found most effective drug; menthol, 1 part in 60 of water, with 30 parts of alcohol or brandy, or chloroform (3 to 6 drops on sugar or in water) sometimes useful. 6. Rectal feeding, gastric lavage, laudanum stupes on epigastrium, ether spray, blistering of cervical spine, and ice-bags exert partly psychical effect. 7. Mental therapeutics, in purely neurotic type of vomiting. 8. Massage, electricity, blisters, etc., may help. *Hall.* 119

Whitlow. TREATMENT. Following measures recommended in thecal whitlow: Make preliminary puncture incision to evacuate pus, apply Martin bandage above elbow or knee, and dip affected part in hot Wright's solution. Depths of wound may with advantage be irrigated with same solution at outset, through cannula. When pain alleviated—in a few minutes—remove bandage, insert sufficient rubber drainage, apply gauze saturated with Wright's solution, equalize circulation by compression pad of non-absorbent cotton, and complete dressing with roller bandage and elevation of part. Patient should at home keep dressing moist and warm with the solution (2½ teaspoonfuls of salt and 1 large teaspoonful of sodium citrate in glass of hot water) and apply rubber bandage for thirty minutes every three hours. Inject small dose of polyvalent stock pyogenic bacterins or, where septicemia present, large dose of antistaphylococcic serum. Inject weak iodine solution in lesion occasionally. Later, strive to restore function of parts by massage, passive motion, and if necessary tendon or fascia transplantation. *Skillern.* 420

Whooping-cough. DIAGNOSIS. Edema of the eyelids, especially the lower lids, some-

times appears before the cough and may be of assistance in the diagnosis. *Thursfield.* Page 97

TREATMENT. Ethyl carbamate found valuable to prevent nervous phenomena occurring when disease has run its course. Dose, ½ to 2 Gm. (7½ to 30 grains) in children under 2 years of age. *Bertling.* 490

Wounds. TREATMENT. Nuclein solution found useful to ward off infection in cases of crushed and lacerated hands, burns, varicose ulcers, minor cuts, etc. *Achard and Redfield.* 105

Sodium perborate found useful as a dressing in infected wounds and acute or chronic ulcers. *Herzfeld.* 167

Solution of aluminum acetate recommended for dressing of infected wounds. Made with aluminum sulphate and acetic acid, of each, 300 Gm.; calcium carbonate, 130 Gm.: distilled water, 1000 c.c. For use, dilute with distilled water, 1 to 7 or 10. *Stansbury.* 227

ANNOUNCEMENTS.

AMERICAN SURGICAL ASSOCIATION.—The American Surgical Association has appointed a Committee consisting of Drs. William L. Estes, South Bethlehem, Pa.; Thomas W. Huntingdon, San Francisco, Cal.; John B. Walker, New York City; Edward Martin, Philadelphia, and John B. Roberts, Chairman, to report on the Operative and Non-operative Treatment of Closed and Open Fractures of the Long Bones and the value of radiography in the study of these injuries. Surgeons who have published papers relating to this subject within the last ten years will confer a favor by sending two reprints to the Chairman of the Committee. If no reprints are available, the titles and places of their publication are desired.

JOHN B. ROBERTS, Chairman,
313 S. 17th Street, Philadelphia.

INFORMATION WANTED ON X-RAYS AND RADIUM IN GYNECOLOGY.—The Seventeenth International Medical Congress will be held in London, from the 5th to the 12th of August, 1913. Dr. Foveau de Courmelles, of Paris, has been asked by the officers of the Congress to prepare by February 1, 1913, the report on "The X-rays and Radium in Gynecology," which is to be read before the sections on Gynecology and Radiology of the Congress. Dr. de Courmelles (26, rue de Châteaudun, Paris), desirous of making the report as complete as possible, requests that all who have written papers on or had experience with these methods of treatment, kindly place the data they have at hand at his disposal.

Book Reviews

INFANT FEEDING. By Clifford G. Grulee, A.M., M.D., Assistant Professor of Pediatrics at Rush Medical College; Attending Pediatrician to the Cook County Hospital, Chicago, etc. Octavo of 295 Pages, Illustrated. Philadelphia and London: W. B. Saunders Company, 1912. Cloth, $3.00, net.

In this useful work the author's aim has been to furnish an up-to-date presentation of the principles underlying infant feeding, including the recent work of Finkelstein and his followers, and to describe the most approved methods in such a way that they shall be readily available for the practising physician. The book is divided into four parts, the first containing chapters on the anatomy and physiology of the gastrointestinal tract, metabolism in the infant, and the bacteriologic flora of the alimentary canal; the second, on that most important subject, breast feeding; the third, on artificial feeding in health and in gastrointestinal disturbances, and the fourth, on the nutrition of the infant in diseases and conditions other than those affecting the alimentary canal, viz., in the premature infant, the exudative diathesis of Czerny, the spasmophilic diathesis, the nervous infant, the rachitic infant, infantile scurvy, eczema, congenital pyloric stenosis and pylorospasm, and various infectious diseases.

Of interest, in the section on breast nursing, is the author's advocacy of long intervals between nursings—never less than four hours. He recommends that, wherever possible, infants in the first month be put to the breast every four hours day and night, believing this procedure the best prophylactic of all for overfeeding and consequent colic. Due stress is

laid also upon regularity in nursing. In artificial feeding, the author believes in simple dilution of whole milk, with the addition of carbohydrates, preferably malt-sugar and various starches (barley, oatmeal, flour-ball, etc.); the amount is regulated according to the stomach capacity at different ages, and the heat-yielding value to approximately 45 calories for each pound of body-weight. Of much interest is Chapter XII, entitled "General Consideration of Nutritional Disturbances of the Artificially Fed Infant," in which are included various charts showing the influences upon the digestive functions of variations in the amount of food given. The author adopts the simple, but comprehensive, classification of nutritional disorders proposed by Finkelstein, viz., (1) weight disturbance; (2) dyspepsia; (3) decomposition (marasmus); (4) intoxication. Each of these types is fully discussed, and its rational treatment explained. Chapter XVII is on "Symptoms and Their Causes"; the treatment of each symptom is also given. The illustrations are original and well selected, though not very numerous. The colored plates depicting various kinds of stools, normal and abnormal, constitute a valuable feature. Altogether, the book is one the practitioner will be glad to possess.

The Way with the Nerves. Letters to a Neurologist on Various Modern Nervous Ailments, Real and Fancied, with Replies Thereto Telling of Their Nature and Treatment. By Joseph Collins, M.D., Physician to the Neurological Institute of New York. 313 Pages. New York and London: G. P. Putnam's Sons, The Knickerbocker Press, 1911. Cloth, $1.50.

This book consists of a series of letters written to the author by patients, setting forth in full descriptive detail the symptoms of a nervous nature from which they suffer, followed by the answers of the neurologist, in which are analyzed the various morbid conditions complained of and advice given for their relief. The letters have already appeared in a medical periodical, and will doubtless be familiar to many, though a certain amount of deletion has been practised in the preparation of the volume. The book is intended by Dr. Collins for laymen, who, in his opinion, in these days when nervous diseases thrust themselves into every grade of life, should have some acquaintance with the obscure points of diseases of this nature. It is well suited in style to attain the author's aim, though the letters concerning the relations between the neurologist and the general practitioner might have been omitted without loss, from the lay reader's standpoint. The book contains much that is suggestive for the physician himself. To the layman it can be recommended as a manual of wholesome counsel on the subject of nervous disorders.

Health for Young and Old. Its Principles and Practice. By A. T. Schofield, M.D., M. R. C. S., etc. Author of "Hygiene for Schools," "Fit for Work," etc. 300 Pages. New York and London: G. P. Putnam's Sons, The Knickerbocker Press, 1911. Cloth, $1.50.

This is a volume on health by one who is not a mere faddist, and who realizes, moreover, that a too conscious effort to attain health may largely defeat the object sought. The ordinary statistics and diet tables of manuals on hygiene are not included, but a large amount of good advice is simply and entertainingly given on sleep, air, food, exercise, sanitary clothing, etc. The aim has been rather to enforce the principles that underlie all health questions than to lay down exact rules and dietaries, which often prove applicable only to a minority. In Chapters XIII to XXI the hygienic measures advisable at different periods of life are discussed.

The General Field

Conducted by A. G. CRANDALL

A Question of Foremost Importance

A writer in a recent issue of the Medical Record, while considering the important matter of early diagnosis in tuberculosis, incidentally touches upon what is perhaps the most vital phase of the whole tuberculosis question, viz., the economic problem, and dwells pathetically upon that ever-present question of how the family can get along if the bread earner is detained in a sanitarium.

The average community has spasms of apprehension if an isolated case of small-pox is discovered in the neighborhood, but so easily habituated to the slower diseases is human nature that tuberculosis, the "disease of the poor," arouses but passing interest. Yet if it is desirable for social and hygienic reasons that small-pox cases be isolated, it is even more important that society protect itself against that inevitable result of privation in the poverty-stricken tenements, tuberculosis.

In this age of old-age pensions, employer's liability and the minimum wage discussed pro and con by public speakers, it is inconsistent that so little should be systematically done for the relief and proper maintenance of wage earners who may be afflicted with tuberculosis.

Every industrious man or woman is a valuable unit from the public standpoint, and from the selfish point of view should be enabled to procure proper treatment and that rest which is so essential; not only rest of body, but rest of mind. Therefore, for its own protection and in order that those who have been previously exposed to infection may be fortified physically in such a way as to prevent them too from becoming elements of danger, society, as a business proposition, must soon undertake the problem which presents itself in a guise by which it cannot possibly be mistaken, viz., the maintenance of indigent victims of tuberculosis and those suffering from the economic consequences of such an affliction and who have in this way made themselves liable to contribute to the spread of the disease.

This is a proposition which is directly parallel to the present system of maintaining municipal hospitals for the treatment of contagious diseases, and when this burden of unquestioned magnitude is assumed, then and not until then can the tuberculosis question be considered as in due process of solution.

Laziness and a Good Appetite

Very early in the recorded history of mankind a law was promulgated that those who would not work should not eat.

There is considerable need at present for a revival of that law. The attractions of the city streets are so great to a large number of loafers that they cannot be prevailed upon to accept any steady employment. Of course, in some way or other they all manage to eat, but, as a direct consequence of their unemployment in a capacity wherein they might easily prove useful, vast numbers of women and children, undoubtedly, get along on a very insufficient dietary.

The unwillingness of a large number of able-bodied men to assist in the tilling of the farms is largely responsible for the

high prices now being paid in the cities for the necessities of life, and the incidental privations.

In some sections the problem of farm life has been solved to a considerable extent by sending out "trusties" from the local jails, who are allowed to work on farms for fair wages and have a part of their earnings saved up for them as a fund to start out again when their sentences are expired. When the time comes that all kinds of worthless specimens of masculinity are not under the protection of politicians, it may be feasible to set these people generally to work on farms where they can demonstrate that there is some real reason for their continued existence. Farm work for loafers is always a safe prescription.

Stale Air for Automobile Tires

It takes a liberal education to operate an automobile and the more the science is developed, the greater the requirements demanded of the chauffeur.

Aside from that extremely bad form of running down pedestrians or colliding with other motorists, inadvertently guiding the machine over the bank, or ignoring the speed laws,—and especially the financial questions associated with upkeep and the importance of ascertaining to the last degree the idiosyncrasies of the engine,—there still remains an important problem, viz., the quality of the air to be used in inflating the tires.

Careful scientific investigation has shown that the sort of air which is best to breathe is the least adapted to the constitutional requirements of the rubber tire. The more oxygen there is in the air, the better ordinarily for the motorist. With the automobile tire the exactly opposite conditions are desirable.

Oxygen within the automobile tire has a peculiar faculty for filtering through the particles of rubber, with the result that the tire becomes gradually deflated. It is said that fully 50 per cent. of automobiles are operated with underinflated tires.

In most of our large cities there should be no difficulty in securing an adequate supply of air of a quality entirely suited for automobile tires. The upper galleries of theaters might furnish atmosphere of admirable quality for the purpose.

Small-pox and Scarlet Fever Combined

The medical men of Scranton, Pa., have had three very sadly afflicted little patients. All these children live in one house and have been recently under quarantine with both scarlet fever and small-pox.

Fortunately, both affections are comparatively mild, thus permitting the children without serious risk to themselves to pose as clinical material of very unusual importance. The clinical combinations of symptoms as produced must have aroused much interest among the attending physicians. This is "mixed infection" in its most literal sense.

Freaks of Anatomy

An 11-year-old boy in New York recently fell on a picket fence and one of the spikes penetrated his breast, directly over the place where his heart should be.

Fortunately for this particular boy, his heart was on the opposite side, as a result of which the accident, of course fatal to almost anyone else, proved to be comparatively unimportant.

To the ordinary person of occasional habits of reflection, the shift of the

heart from its normal location to some other niche in the thorax would be likely to cause complications. But in this present surgical era of transplantation, it does not seem to matter so much where the various necessary organs are located, provided they do not get in each other's way.

Evidently the time will come when, the science of surgery having progressed to an even higher degree of perfection than at present, any crippled organ of the human body can be removed and a corresponding portion of the anatomy of a dog or a calf be substituted. This will be a golden age for the surgeon, as there are a very large number of people of fair, or even moderate, circumstances who would be willing to make some financial sacrifice if they could have some essential organ of their anatomy repaired or replaced.

With the vaccines and serum therapy to combat germs, and with properly assorted domestic animals to supply raw material for surgical purposes, it would look as though a man might eventually live as long as some of his biblical ancestors.

A Suggestion as to Eugenics

Those earnest men and women who, inspired by a vision of greater physical efficiency in future generations, are endeavoring to throw the rays of knowledge where much black shadow now rests perhaps have no greater element of discouragement than the Gretna Greens so accessible to many densely populated sections.

The instinct which leads a young couple to elude their parents and make a hurried and unconventional trip to the marrying parson is primarily the same instinct which leads so many young children to deceive their parents in matters where they feel assured that their parents will disapprove of their actions.

It is unfortunate enough that the unscrupulous vender of glucose candies and stale fruit should be able to lend practical encouragement to unhygienic dietary practices, but the marrying parson who gleefully and unctuously lends his assistance to immature couples, who perhaps never needed parental guidance so much as at that particular time, places himself beyond the pale of all that is reputable and decent in the various walks of life.

Therefore, as above stated, one of the first essentials in the solution of the great problem of eugenics is found in the development of public sentiment which will make every State consider itself disgraced which through statute law permits the marrying parson to extend his polluting influence upon society.

Crimes Against Childhood

It was Charles Dickens, the first among English novelists, who succeeded in stirring human hearts because of the wrongs of childhood. What that master of laughter and tears really accomplished as the champion of the helpless child can never be estimated.

With the yearly output of probably two thousand works of fiction, there apparently has arisen no champion of helpless childhood among the great army of fiction writers whose shoulders were broad enough to bear the mantle of Dickens.

This is an age when organized business eagerly searches out every possible channel by which money can be made and has seized upon childhood as one of the quick sources of profit.

Every insurance company which issues policies on young children is placing temptation in the way of a certain per-

centage of parents. That they yield to those temptations is but too often manifested.

The factory employer of child labor, no matter how humane his intentions may be, is conducting his business in a manner contrary to the best interests of society. Those who can employ children in outdoor occupation with reasonable hours stand in a very different position. It is to be hoped that a campaign of enlightenment as to the disastrous consequences of indoor work for children may be carried on that will wipe out this blot upon our present civilization.

The Scolding Habit

A prominent newspaper has got all "fussed up" because a certain high-school faculty had a slight controversy with some of their boys as to the standard of scholarship required for graduation, the boys retaliating by claiming that if they made good in their studies to that extent they would have to give up their athletics.

The newspaper sees in this incident evidence that the public school system is totally and inconceivably wrong.

It is a bad habit to be constantly finding fault.

In view of the large number of able and distinguished members of the teaching staffs of the various universities and colleges, it seems strange that if enthusiasm for athletics has such a demoralizing influence upon scholarship more protest should not have been raised against this prominent feature of college life by those who come in daily contact with students in the class-rooms.

This is a world of bad habits. Perhaps one of the worst of all is the scolding habit—the habit of seeing only the unfavorable side of everything. Many of the editorial paragraphers of the present day would apparently be much benefited if they could secure a prescription from some competent physician calculated to exert a favorable influence upon an inactive liver.

Never Wash the Face

This startling piece of advice is intended for the well-groomed woman. It comes from a very high authority in the world of fashion.

The practice of medicine presents considerable variation from the routine methods of more primitive times and conditions.

A family practitioner cannot be considered successful if he is only called in cases of emergency. Real success in medical practice includes opportunity to extend helpful suggestion with reference to ordinary daily hygiene.

Now, the average physician would probably hesitate to tell his woman patients that under no circumstances should they ever wash their faces. Very likely it has never occurred to one doctor in a thousand to give that advice and yet, without question, it is excellent and would be endorsed by any good authority on the care of the complexion.

The doctor who makes a standard of good looks, as likewise a standard of good health on the part of his patients, and lends his energy accordingly, can always be reasonably sure that his patients will appreciate him. In the matter of good looks, the complexion of both sexes is only one item.

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Original Articles

THE TREATMENT OF SOMATIC DEATH.*

BY W. WAYNE BABCOCK, M.D.,

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LEGALLY a man is considered to be dead when a qualified physician, upon examination, pronounces him so to be. For centuries physicians have based their concepts of death upon the cessation of the so-called vital activities. When evidence of respiration, circulation, and cerebration may no longer be detected, the patient is said to have undergone somatic death. Often with the abolition of the respiration, usually with the cessation of the pulse, the patient is pronounced dead, and the body is permitted to pass from the province of the physician, although it has long been recognized that many cells continue alive and that complete molecular death has not yet occurred throughout the body. The epithelial cells, and epithelial appendages such as the hair, nails, and teeth, may continue to be alive for weeks. The simpler connective tissues, such as bone, cartilage, fibroconnective tissue, in part may continue in a living condition for days; muscles and certain glands live for hours after somatic activities have ceased, while the very highly specialized tissues, particularly of the nervous system, may continue in a living condition for at least a number of minutes after death is supposed to have taken place. Crile's experiments upon dogs show that it is possible to resuscitate these animals after they have been somatically dead for periods of time up to seven and one-half minutes. The cessation of the circulation apparently produces in the neurocytes chromolytic and fiber degeneration, in some places suggesting absolute cellular death. Despite these severe degenerative changes the dog may appear to be well. Thus one animal, that had apparently entirely recovered after seven and one-

* Read at the Thirteenth Annual Meeting of the American Therapeutic Society, held in Montreal, Canada, May 31 and June 1, 1912.

half minutes of circulatory arrest, was found on *post mortem*, four weeks later, to have a marked degeneration of fibers in the pyramidal fasciculi running from the cord to the cortex and in Flechsig's fasciculi, as well as occasional degenerative changes in other ascending and descending fibers.

As to the period of time that the central nervous system may live after complete arrest of circulation, much remains to be learned. Crile states approximately that the respiratory center may survive anemia thirty to fifty minutes; the vasomotor and cardiac centers, about twenty to thirty minutes; the spinal cord, eight to ten minutes; the motor cortex, eight to ten minutes; the portion of the brain presiding over consciousness, the intellect, and psychic state, six or seven minutes. The higher neurons may live for considerably longer periods than these figures would indicate. In one of my patients certain cord reflexes were regained after not merely ten, but approximately twenty-five, minutes of complete cardiac cessation.

With this knowledge we should abolish the misleading term "somatic death," and should substitute some more exact designation, such as suspended animation. The surgeon, in particular, should be the one who has no belief in somatic death. Many, many persons have passed into molecular death because with the appearance of the signs indicating somatic death the physician has abandoned hope, or has failed persistently to try approved methods of resuscitation. In few operating rooms are the surgeons and attendants drilled in prompt treatment of this so-called death. Remedial methods are usually unsystematic, badly applied, associated frequently with most dangerous delay, and often quickly abandoned. For cardiac failure I have seen half a dozen of surgeons simultaneously produce hypodermic syringes and each proceed to inject into the patient the substance in which he personally had the most faith, irrespective of what was being injected by the others. For respiratory failure, many of you have perhaps seen the harrowing spectacle of two panic-stricken attendants trying independently to practise artificial respiration, the one making inspiratory movements with the one arm at the time expiratory movements were being made by the other, the occluded respiratory passages being in the mean time entirely neglected. It is my belief that in a large proportion of the cases of death from anesthetics resuscitation was possible. It is also my belief that in nearly every case of death under spinal anesthesia the patient might have been resuscitated, provided there had been no advanced organic disease preventing such resuscitation. The cardinal guide in the treatment of these conditions is the *respiratory function*. The most important part in the treatment is the *maintenance of the circulation*.

Perhaps the most powerful and rapidly acting circulatory stimulant at present known is the active principle of the adrenal glands, epinephrin. If it is properly introduced, its effects are prompt; but they are also transient, the duration of the stimulation being about ten or fifteen minutes. The extract of the posterior portion of the pituitary gland has a similar and perhaps a more prolonged action. The adrenal product should be introduced into the circulatory system. Its administration by mouth or subcutaneously is followed by so little systemic effect as to be practically valueless. Its subcutaneous

injection may produce extensive, and even very dangerous, local necrosis. *Intravenous injection* is the simplest method for the satisfactory administration of this stimulant. Before every serious operation we have prepared a sterilized six-ounce glass funnel with a hollow needle, connected by six feet of soft-rubber tubing. If the patient shows alarming symptoms, this simple apparatus is filled with warm physiological saline solution and the needle introduced into one of the large veins about the anterior surface of the elbow. Usually the needle may be introduced directly into the vein without an incision of the skin, in which case it may then be strapped to the arm by adhesive plaster, after properly supporting the terminal portion of the rubber tubing and needle. Should there be any difficulty, the vein is exposed and raised upon the finger, and the needle introduced. If the patient's condition is urgent, there should be no hesitation in freely incising the skin and obtaining satisfactory exposure of a large superficial vein. Unfortunately, in an emergency but few assistants can be depended upon to introduce a needle promptly and accurately into the vessel. Crile's suggestion that the injection should be made into one of the large arteries, so as to flow back and distend the coronaries, involves a more serious procedure, and one that we would not ordinarily commend. The operator is usually so occupied by efforts at artificial respiration, cardiac massage, or other measures that, unless he has an especially well trained staff, he will hesitate, after seeing the usual inefficient efforts at intravenous injection, to order the more difficult and dangerous intra-arterial introduction of the needle. The warm solution having started to run into the vein, and the fact that there is no leakage into the tissues being shown by the absence of local swelling, from 2 to 10 drops of a 1:1000 solution of the epinephrin are to be dropped into the funnel, or, if preferred, injected, as Crile suggests, by a hypodermic needle directly through the wall of the rubber tubing. In human practice often within a few seconds the adrenal effect is perceptible. The color returns to the face and the pulse to the wrists, and the cardiac pulsations grow progressively stronger, so that within a few moments the entire body may be observed to shake from the violence of the circulation and the hand placed upon the operating table may even feel the vibrations from the tremendous cardiac contractions. This extreme violence is undesirable and inflicts a strain upon the circulatory system which may be very harmful. We therefore prefer, unless the patient's condition be unusually urgent, to introduce but 2 or 3 drops of epinephrin into the single funnelful of solution, and as the heart action improves we direct that the tube be pinched so that further entrance of the solution is arrested. Later, if the pulsations weaken, the flow is started and further drops of the stimulant added to the funnel as seems requisite. In this way one may introduce the plain saline solution or a weak or strong solution of the adrenal principle, as required, and the injection may be continued with intermissions for an hour or longer.

In some cases, after cardiac arrest, the solution does not seem properly to enter the cavities of the heart; or the heart has stopped in diastole, and the overdistention must be relieved. Under these circumstances *cardiac massage* is very valuable. Before attempting cardiac massage, however, stimulation of

the heart by regular violent blows, made with the ulnar side of the fist, over the precordium, may be tried. If an abdominal incision has been made, the hand is introduced to the diaphragm and the heart rhythmically compressed and massaged against the overlying chest wall. In this way the cavities are largely emptied and a better opportunity for the stimulating solution to enter the heart is obtained. If no abdominal incision has been made, I make a simple stab puncture in the fifth costal interspace, one and one-half inches to the left of the sternum. The index or middle finger is at once pushed through the opening and hooked about the left edge of the heart, which is rhythmically compressed against the overlying chest wall. Leakage of air into the thorax may be prevented by placing wet sterile compresses about the base of the finger, or by employing a small incision. With a very marked dilatation of the heart the compression of a single finger may be insufficient, as illustrated in one of our cases. With an arrested circulation I have been able to produce by such cardiac massage alone a distinct impulse visible in the vessels of the neck. The period of duration of life after the cessation of cardiac action is still so theoretical, and so based upon experiments on the lower animals, that the attempts at restoring the circulation should be continued for one-half or three-fourths of an hour, or, under certain conditions, even longer.

Of course, the circulation will not continue, even if restored, if there be no respiration, and an important consideration is the *oxygenation of the circulating fluid.* The well-known experiment in which the excised animal heart perfused with Ringer's solution fails and the heart stops beating if the Ringer solution be free from oxygen, suggests that it may be of advantage to pass oxygen through the physiological salt solution before using it. I am indebted to Dr. D. M. Hoyt for this suggestion. In an emergency this may be accomplished by introducing a sterile glass tube to the bottom of the percolator or funnel, so that a stream of oxygen bubbles through the fluid before it enters the vein. The importance of this is emphasized by the fact that the tissues and centers receive their oxygen directly from the plasma, and that the abnormally small oxygen content of the plasma of an asphyxiated person becomes markedly less through the dilution of the plasma with the saline solution.

Artificial respiration, to be efficient, must be given systematically and with careful attention to the patency of the upper respiratory passages. In cases of failing respiration we prove that the air passages are free by keeping a fine wisp of cotton fastened to the tip of the nose. The movements of the cotton serve as a guide, rather than the often-deceptive movements of the chest. Ineffectual methods of artificial respiration are also promptly detected because they fail to move this indicator. One of the simplest and most efficient methods of artificial respiration to be carried out on the operating table is by rhythmic compression of the thorax. The patient's arms are extended above the head, and an assistant holds the patient's head and maintains the freedom of the upper respiratory passages by holding forward the tongue, by elevating the jaw, or by properly extending the head. The folded arms of the surgeons are then placed across the patient's chest, while the assistant, with his hands below the surgeon's elbows, presses upon the lower ribs; the

compressions are made downward and inward in such manner as is found to give the greatest range of movement of the wisp of cotton. The extended arms favor the expansion of the chest when the compression is released. In this manner, aided by relays of student assistants, in one case we continued artificial respiration, and so maintained the circulation, for six hours.

Thoracic disease, extreme obesity, marked abdominal enlargement, rigidity of the thoracic walls, or serious intrathoracic disease may prevent the employment of artificial respiration; or the method may interfere with the more urgently needed cardiac massage.

Intratracheal insufflation of oxygen, after the Meltzer-Auer plan, is perhaps the best method at present known. Unfortunately, the introduction of a catheter through the larynx to the tracheal bifurcation may be difficult without a special introducer, which may not be at hand at the unexpected emergency. Having once wasted considerable time in an effort to introduce a soft and ill-suited catheter through the mouth by finger guidance into the larynx, I have twice since in such an emergency made no effort to introduce the tube by way of the mouth, but have made a small incision through the skin, nicked the trachea, and spread the small opening with a pair of narrow, blunt scissors sufficiently to slip in a small urethral catheter, which was at once connected with the oxygen tank; the catheter used was of small-enough size not to interfere with ordinary respiration or to produce emphysema from excessive oxygen pressure.

During all these procedures the head should be lowered. Not infrequently the heart will start beating solely from the impulse of blood which rushes into it and distends the cavities as the patient's body is inclined.

Summary.—After drowning; after the use of anesthetics; after various forms of asphyxiation, doubtless many hundreds of persons have been considered as dead, and have been permitted to die, because the evidences of somatic death were present. *No physician, particularly no emergency surgeon, should believe in somatic death.* No person should be considered dead until irreparable molecular changes have taken place in vital organs. Cessation of function should no longer be considered as evidence of death. Physicians should be drilled in the technique of resuscitation, and particularly they should be taught as to the need, at times, for long-continued and carefully applied measures. Many persons familiar with surgical technique, quite competent to undertake an appendectomy or herniotomy, are surprisingly inefficient in quickly and accurately giving an intravenous or intra-arterial injection to a dying patient.

The following are illustrative cases:—

CASE I.—*Complete arrest of circulation for about twenty-five minutes and of respiration for about thirty-five minutes. Final resumption of circulation and respiration by cardiac massage, intravenous injections, and forced artificial respiration. Secondary pulmonary edema with death forty-three hours later.*

Mrs. A. D. C., an obese colored woman of 38 years. Nullipara. Ill seventeen years with pain in the right inguinal region, and had noticed progressive abdominal enlargement for fifteen years. No metrorrhagia. The patient entered the Samaritan Hospital December 5, 1911. On the following day she was given ⅙ gr. of morphine with $\frac{1}{100}$ gr. of scopolamine by hypodermic injection at 2.45 and also at 3.15 P.M. At about

3.52 P.M., as the patient was rapidly becoming stupefied by the narcotic, 5 cg. of alcoholized amylene hydrochloride were injected into the twelfth dorsal interspace. The injection was given in the sitting posture, and, on account of her obesity, there was some delay in placing the patient supine upon the table. About three minutes after the intradural injection a median abdominal incision was made. The blood was very dark and no pulsating vessels were noticed. On examination, it was found that the patient was not breathing, and that the teeth were clenched tightly and the mucous membrane cyanotic. With some delay and difficulty the teeth were pried apart, the tongue pulled forward, and artificial respiration by rhythmic compression of the thorax attempted. These efforts seemed entirely inefficient, the diaphragm being high, the chest short and thick from fat, the abdomen distended and splinted by the large fibroid tumor present, and the neck short and obese, rendering the upper air passages difficult to manipulate. As the patient was pulseless at the wrist, the hand was introduced through the incision, the abdominal aorta grasped, and found also pulseless. Carrying the hand up to the diaphragm, the heart could be felt, apparently rather large and flabby, but without any contractions. Cardiac massage, instituted through the diaphragm, produced no response. Attempts were again made at artificial respiration, while an assistant endeavored to introduce normal saline solution with epinephrin into a vein of the left arm. After some difficulty it was found that the vein, which was rather collapsed, had not been properly entered, so that the fluid was merely distending the tissues. The assistant was, therefore, directed to try the opposite arm. The patient was now relaxed, the mucous membranes were ashy, the skin was cold, there was no evident reflexes, and every appearance of death was present. An attempt was made to use oxygen through the mouth. Full doses of caffeine and strychnine were injected subcutaneously and, as the efforts at artificial respiration failed to oscillate fibers of cotton fastened in front of the nose and mouth, tracheotomy was rapidly done and a trachea-tube introduced. An effort was then made to inflate the lungs by an intermittent flow of oxygen from the oxygen tank, but the volume of the stream was insufficient. The arms being held above the head, repeated and continued efforts were made to establish respiration by thoracic compression, which was stopped from time to time only long enough to permit the hand to be introduced under the diaphragm, and the heart to be compressed or massaged against the overlying chest wall. Finally, it was observed that the saline solution supposed to be running into the vein of the right arm was dripping from the arm, and in enlarging the incision I found that the vein had been punctured and that the needle lay alongside the vessel. The needle was properly introduced into the vein and the flow of salt solution and epinephrin continued. For perhaps the fifth or sixth time I again introduced the hand and arm into the abdomen and renewed the intermittent compression of the heart, hoping to force out sufficient blood to enable the adrenal product to enter the chambers. The patient had now been apparently dead about twenty-five minutes. Suddenly the hand, grasping the heart, felt a violent and startling thrill, succeeded by rapidly increasing and more violent cardiac contractions. The pulse reappeared at the wrist, the incisions in the arms and abdomen started to bleed, and the ashy color faded from the mucous membrane. The cardiac movements were so violent that the flow of the saline solution containing the adrenal principle was checked. A few minutes later the heart grew weaker, the pulse faded from the wrist, and it was evident that the cardiac action could not continue without efficient respiratory action. The flow of oxygen through the tracheal tube was discontinued and I applied the end of a soft-rubber drainage-tube against the tracheal opening, and blew violently into the lungs. I was gratified to note that the chest expanded and that on the removal of the tube the collapsing chest forced a part of the air out. I continued intermittent insufflation and had the flow of the solution resumed from time to time, as seemed to be required. The pulse now returned and was fairly sustained. An assistant continued the efforts of insufflation. About 4.30 P.M., or about thirty-five minutes after apparent somatic death, the first faint voluntary respiratory movement was observed. Gradually voluntary respiration was resumed. The abdominal incision was closed and the patient

returned to her bed with a temperature of 97°, respiratory rate of 24, and pulse of 112. She did not regain consciousness, but winking could be produced by tapping the nose. Some pulmonary edema was evident from the passage of blood and mucus along the tracheal tube. On the day following, the temperature reached 102⅗°. The respiration was more noisy, rapid, and labored, and finally reached 50, while the pulse rose to 160. On the second day at 11.10 A.M., or forty-three hours after the operation, the patient died, the rectal temperature being 107⅗° at the time of death.

CASE II.—*Prolonged artificial respiration, illustrating a remarkable influence of oxygenation upon the circulation.*

A man of good physique, aged about 20, had his left arm avulsed close to the shoulder by a train. He was brought to the operating room about three hours after the accident and observed to be pulseless at the wrist after being placed in a sitting posture upon the operating table. Spinal anesthesia with middorsal injection was given with the hope of blocking shock. At this time we did not realize that an anesthetic increases pre-existing shock, although it may block shock that succeeds its induction. The patient was placed in a horizontal position and as the stump was being prepared for operation the respiration ceased. Artificial respiration by rhythmic compression of the thorax was at once started, and in about fifteen minutes breathing was resumed, and the circulation had improved. Unwisely, an attempt was then made to trim off the mangled portions of the arm. This was promptly followed by renewed respiratory failure and loss of circulation. Artificial respiration was again started, after which the color returned to the lips and the pulse to the wrist. As there were no voluntary efforts at respiration, and as the patient remained unconscious, artificial respiration was continued by relays of assistants and students. From time to time the efforts at artificial respiration were imperfectly carried out, whereupon the skin would become ashy, while the pulse could no longer be detected at the wrists or over the carotid. By substituting more efficient respiratory movements, the color would return and the pulse reappear. This occurred a number of times. Finally, the cardiac response became feebler, and at last could not be produced. Efforts at artificial respiration lasted from 8 P.M. until about 2 A.M., *i.e.*, circulation was maintained for nearly six hours by artificial respiration.

Not long after this experience, a second young man was admitted with a similar avulsion near the shoulder-joint. He was given no anesthetic or artificial respiration, but was merely given the usual stimulation, a simple occlusive dressing being applied over the wound. This man died of shock about seven hours after admission to the hospital.

CASE III.—*Cardiac and respiratory cessation; illustration of the necessity for efficient cardiac massage.*

Mr. E. H., aged 43, was admitted for advanced and neglected left pyothorax with large subcutaneous phlegmon and right pneumonitis. The patient was in a very bad condition, with pulse of 120 and respiration of 40 on admission. Amylene hydrochloride, 4 cg., was injected through the ninth dorsal interspace at 5.55 P.M. Operative resection of rib at 6 P.M. The opening of the chest was attended by a gush of pus, followed by cardiac and respiratory arrest at 6.02 P.M. Artificial respiration by compression was found to be impossible, and by forced respiration impracticable, because of extensive pulmonary collapse and disease. A stab wound was made through the fifth left intercostal space, with introduction of the finger, which was hooked about the edge of the heart, and rhythmic compressions started. The heart was greatly dilated and the efforts at massage were ineffectual. Salt solution with 20 minims of adrenal blood-pressure-raising principle was introduced into a vein of the arm. As the overdistended heart failed to respond, a second stab puncture was made in the fifth right intercostal space and a second finger introduced. The dilated heart extended nearly from one nipple line to the other. Rhythmic compression and massage by simultaneous flexion movements of the fingers through the two punctures were followed by resumption of cardiac movements after

complete cessation of the heart for about ten or fifteen minutes. The heart continued to beat for several minutes, but, as we failed to induce respiratory action, it eventually ceased.

CASE IV.—*Illustrating the futility of efforts at resuscitation with insufficient circulating fluid.*

Mr. X., aged about 45, had swallowed a bone while eating meat four days previously. He entered the hospital for an X-ray picture, and as he started to ascend the stairs he fell over in a faint, with blood gushing from the mouth. The patient was at once brought to the operating room and efforts at resuscitation and cardiac massage made. The rapid leakage from one of the large thoracic vessels, however, rendered all our efforts futile.

CASE V.—*Respiratory and circulatory failure in an aged woman. Successful resuscitation. Death several days later from progressive peritonitis.*

Miss E. H., aged 87. Strangulated umbilical hernia, with peritonitis of two days' standing. Condition bad. Respiration 24 on admission, fecal vomiting; pulse 104. Para-aminobenzoyldiethylaminoethanol hydrochloride, 9 cg., was given in the tenth dorsal interspace. Mayo operation, with resection of omentum and return of bowel. Respiratory and cardiac failure of about ten minutes' duration. Oxygen and artificial respiration, and adrenal blood-pressure-raising principle, 3 min., in saline solution intravenously. While there was no evidence of superficial circulation and the patient appeared as one dead, we were not positive as to absolute cardiac arrest. The patient revived, but died four days later of progressive peritonitis.

CASE VI.—*Respiratory and cardiac failure in a patient with strangulated hernia. Successful resuscitation. Complete recovery.*

T. M., aged 56. Asthenic. Strangulated inguinal hernia of about thirty hours' duration. At 3.40 P.M. the patient received $\frac{1}{100}$ gr. of scopolamine and $\frac{1}{6}$ gr. of morphine. At 7.15 P.M. he received 6½ cg. of alcoholized amylene hydrochloride in the twelfth dorsal interspace. At 7.20 P.M. the operation was started, and it was finished fifteen minutes later. The patient vomited and there was failure of respiration and circulation. Artificial respiration was practised, and intravenous injection of salt solution containing 10 minims of epinephrinized solution given. The patient was revived in about ten minutes, but the circulation soon diminished in volume, so that at 8 P.M., when he was returned to his bed, no pulse could be detected and the temperature was 94°. The patient remained pulseless until 9.05 P.M., when it was possible to count his temporal pulse as 84. The later history was uneventful. The patient was discharged cured fifteen days after admission.

CASE VII.—*Respiratory and cardiac failure in a patient with large uterine fibroids. Artificial respiration for twenty minutes required. Operation completed. Recovery.*

Mrs. D., colored, aged 49. Multiple uterine fibroids weighing twelve and one-half pounds, which had first attracted attention four years previously. Respiratory cessation, with failure of circulation. Evidence of absolute cardiac arrest not obtained. Artificial respiration for twenty minutes. Eighteen ounces of saline solution with epinephrin given intravenously. Recovery.

CASE VIII.—*Respiratory and cardiac failure in a uremic and very septic patient. Successful resuscitation. Progressive uremia and death four days later.*

Miss W., aged 56. Uremia and sepsis from right pyelonephrosis and left nephritis. Patient very septic and in bad condition previous to operation. Operation under spinal anesthesia. Right nephrectomy and decapsulation of left kidney. Respiratory and cardiac failure. Saline solution intravenously, with 18 minims of epinephrin. Revived. Patient died four days later from sepsis and progressive uremia.

DISCUSSION.

Dr. Thomas E. Satterthwaite, of New York, said that it would be extremely important to know how long a patient apparently dead might survive under certain conditions, but that this was a subject of which little was known as yet. Dr. Babcock's experiences were therefore of great interest to the profession. Of the two forms of death, by failure of the circulation and of the respiration, sometimes the heart gave out first, sometimes the lungs. When an interne at the New York Hospital he had practised a method of artificial respiration which in his hands had often proved effective. The abdomen is compressed and the contents are pushed upward with the right hand, while at the same time the root of the tongue is depressed, and this organ drawn somewhat out of the mouth with the fingers of the left hand. The right hand presses upward rhythmically, at first a few times a minute, the movements gradually increasing in frequency. A towel, handkerchief, or something of the kind is put in the corner of the mouth, to protect the hand from the patient's teeth. This method had been published for a score of years in Wood's "Physician's Visiting List" and in 1885 was described in Wood's "Reference Handbook." He had never found it necessary to introduce a tube into the trachea. Regarding the blood-raising principle of suprarenal gland, he was on record as having advised caution in the use of this drug. In one instance, while making some experiments at the Physiological Laboratory of Columbia University with the intravenous injection of 5 minims of a 1: 1000 solution of the chloride of the principle, he found that intense flushing of the face and violent headache were produced in the human subject on whom the injection was used. In fact, the man declined to have the injection repeated. Unpleasant symptoms continued until the next day. Dr. Satterthwaite felt that, while the action of this remedy was prompt, it was so extremely powerful that an intravenous injection of the strength mentioned might easily be dangerous. He thought it better to commence with a small dose and repeat it at suitable intervals. As contradistinguished from intravenous injections, the hypodermic or intramuscular injections would to some extent act as a stimulus, but these were uncertain in their action and should not be relied upon in emergencies.

Dr. P. S. Pittenger, of Philadelphia, at the request of Dr. F. E. Stewart, made some remarks in regard to the dosage of the active principle of suprarenal gland. His experience, he said, had been entirely with animals. He found that from 12 to 16 minims of a 1: 1000 solution will generally produce a maximum rise in blood-pressure when injected intravenously into dogs of medium weight (6 to 12 kilos). Of course, the rise produced varied considerably with the difference in susceptibility in the different animals injected. Generally, however, an intravenous injection of from 6 to 8 minims of the solution named would produce a rise in blood-pressure ranging from 30 to 70 mm. of mercury.

Dr. Babcock having replied to a question by *Dr. Oliver T. Osborne*, of New Haven, Conn., as to what anesthetic he employed in the last case reported in the paper, that he had used spinal anesthesia with para-aminobenzoyldiethylaminoethanol hydrochloride, Dr. Osborne said that he wished to register his emphatic protest against the use of large doses of morphine and scopolamine previous to anesthetization with ether or chloroform. Aside from the effect upon the blood-pressure and other conditions, by such a procedure one produced profound narcotic poisoning from two or more drugs. Another point: general anesthetics were given to stop shock, but spinal anesthesia did not have this effect. As to the proper dose of the epinephrin, the speaker agreed with Dr. Satterthwaite that 5 minims of the solution mentioned was a dangerous amount. He believed in the use of a solution of 1: 10,000, and very little of that. The reason why the solution of 1: 1000 given hypodermically did not do harm in some cases was that the patient did not get all of the dose into his circulation at once. Personally, he had been making a study of all the anesthetics now recommended or in use, and he had come to the conclusion that the thoroughly trained anesthetist could employ almost any anesthetic without injury to the patient. This was certainly not the case, how-

ever, with the unskilled administrator, and, as he had stated, he believed it to be especially dangerous to advise morphine or scopolamine as a preliminary to the anesthetization.

Dr. Spencer L. Dawes, of Albany, N. Y., said he wished to express his entire agreement with Drs. Satterthwaite and Osborne in regard to the danger of too large doses of the suprarenal principle. He would like also to record his protest against the use of such narcotics as morphine and scopolamine as a preliminary to general anesthesia, as well as the use of that particular class of anesthetics in the hands of any but the most experienced.

Dr. Charles E. de M. Sajous, of Philadelphia, said that many points had been brought up which instanced the prevailing lack of knowledge concerning the physiological action of these remedies. Before we administered an anesthetic we should fully understand the manner in which it causes the cellular elements of any tissue to modify their functional activity. Textbooks taught, for example, that morphine diminishes pain by causing the cerebral sensory centers no longer to take cognizance of the stimuli received from the periphery. How did it accomplish this? Certainly, the answer was not afforded by the explanation just given, which in itself only described an effect, but not the *modus operandi* of that effect. Analysis aided by the microscope would show, however, that morphine caused constriction of the arterioles which supply the sensory centers of the brain to which the pain impulses arrive; receiving less arterial blood, their sensibility was necessarily reduced, and the pain impulses were not perceived. If we now bore in mind that morphine has a similar action upon the arterioles of the whole organism, it would become plain that in giving morphine as a preliminary to anesthetization we added an agent which might block the circulation into the tissue elements, and thus terminate life by arresting the functions of vital organs, such as the heart. There was need of a more careful physiological study of the causes of drug action. The laboratory worker was too often a mere registrar of experimental facts who exercised very little his reasoning faculties to ascertain the manner in which the phenomena recorded were produced.

Dr. A. Ernest Gallant, of New York, said the paper applied to surgical cases, and it seemed to him that the speakers in the discussion had treated of matters which were foreign to it. When a patient was to all intents and purposes dead, one was certainly justified in running some risks in the effort to bring him back to life again. The case was entirely different when we were treating patients who were in no such desperate straits. It was to be borne in mind that Dr. Babcock's cases were surgical ones and cases where death occurred upon the table, and that in such instances one ought to give a remedy freely enough to get the effect desired, and never mind the dose. In these cases of collapse the tongue did not fall back unless the head was permitted to fall back. Upon the operating table the head was generally placed too low. Now, if, when the respiration failed, the head were brought well forward, the tongue and the jaw could not fall back. As had been clearly demonstrated by Hare, the pharynx was widest open when the head was bent farthest forward. As to the difficulty of getting a soft-rubber tube into the trachea, it seemed to him, from the experiences of obstetricians with asphyxiated babies and his own experience in intubation for laryngeal diphtheria, that this had been exaggerated. If one ran his finger down to the base of the tongue and pulled the epiglottis open, it did not seem to him that the introduction of the tube would be a difficult matter.

Dr. Alfred C. Croftan, of Chicago, called attention to a method of resuscitation in anesthesia, stating that he first heard of it from a country doctor who was accustomed to doing "farmhouse surgery." This method was analogous to the treatment of asphyxiated babies by swinging. The method employed was to pick up the patient, have her hang over the shoulders of a strong farmhand, and swing her to and fro rhythmically. In the absence of the necessary emergency paraphernalia, this method seemed decidedly worthy of trial.

Dr. N. P. Barnes, of Washington, D. C., wished to refer to a method of artificial respiration mentioned by him in the *International Clinics* of 1905. A patient is brought to the edge of the table, face downward, and chest inclined to favor the expelling of water, mucus, or blood from the lungs. The abdominal muscles are fixed by the unyielding table, and the operator, kneeling or standing over the back of the patient, makes pressure downward upon the lower ribs, thus expelling the air. Relaxing the pressure on the ribs gives play to their convexity, thus drawing air into the lungs. These pressures and relaxations are continued rhythmically at intervals of five seconds, the individual being thus forced to breathe rhythmically without effort on the part of the patient or operator.

Dr. Babcock, in closing, said the danger from epinephrin, he thought, could be obviated if proper care were observed in its administration. His apparatus consisted of a 6-ounce glass funnel, six feet of rubber tubing, and a hollow needle. For use this simple apparatus was to be filled with salt solution and the needle properly introduced into a vein. There was then dropped into the funnelful of warm normal saline from 1 to 5 drops of 1: 1000 epinephrin solution, according to the urgency of the patient's condition. He then kept on adding more of this until he obtained a sufficient effect. Some of his cases had had as much as 15 or 20 minims of the solution. As soon as the cardiac effect was noted the tube was clamped or the injection of simple saline solution substituted. In this way the agent could be used intermittently for fifteen minutes to an hour, as was required. The employment of epinephrin subcutaneously was to be avoided, from the slight cardiac effect produced and from the great danger of local necrosis. During the efforts at resuscitation it was, of course, important that the patient's head be lowered. He was not convinced as to the advantage of Crile's arterial injection of epinephrin. In regard to the preliminary use of morphine or scopolamine in the production of anesthesia, he thought that the cases in which such drugs were to be employed should be selected with care. He certainly would exclude them from any patients with seriously damaged hearts or lungs, or with grave impairment of the nervous system. He desired it to be understood that the methods to which he had referred did not apply exclusively to surgical cases, as they could be employed in drowning and in other cases where resuscitation was called for, and also that he had employed the method in patients who had not had spinal anesthesia.

A STUDY OF PRIMARY CANCER AND SARCOMA OF THE LUNG.*

By ROLAND G. CURTIN, M.D.,

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I have a twofold object in bringing before you the subject of primary malignant disease of the lung. In the first place, it has never been considered by the Association, and; in the second place, I can perhaps give you some aids in its diagnosis. Judging from my own experience, I think that primary malignant disease of the lungs is more frequently overlooked than any other serious pulmonary condition. It is an exceedingly rare disease; not usually diagnosticated in the early stage, and later it is often obscured by the metastases that usually occur. Its rarity is shown by the statistics which will be given farther on. When it occurs after an operation, especially amputation of the breast, it is early suspected, but without such a history it is often wrongly

* Read before the American Climatological Association at Hartford, June 13, 1912.

diagnosticated as one of the more common diseases of the chest, and is most frequently mistaken for pleurisy with effusion, hydrothorax, empyema, or acute miliary tuberculosis. After tapping the chest, surprise is usually occasioned by the small amount of fluid obtained and the slight, if any, relief to the dyspnea. As a metastatic disease it is not infrequent, as indicated by post-mortem evidence. The rarity of primary cancer of the lung is shown by statistics of Dr. John A. McGlinn, of Philadelphia, who recently collected the data from the post-mortem rooms of the Philadelphia General Hospital. In 8515 consecutive *post mortems* he found 457 cancerous bodies, and of these only 4 showed primary cancer of the lung. I inquired of a physician with good diagnostic ability, who had a large private and consulting practice and was the holder of several important hospital positions, how many cases he had met with. He told me he had met with only 3 in his long experience.

Dr. McGlinn, in his report of 457 cancer cases, found metastatic disease in the lungs and chest as follows: Aortic glands, 1; bronchial lymph-nodes, 1; lungs, 70; mediastinal lymph-nodes, 4; mediastinum, 25; pleura, 30; trachea, 1; thorax, 3; thoracic duct, 1,—in all making 191 cases where the chest was secondarily affected among 457 cancerous cadavers. The lungs were most frequently attacked,—once in about 6½ cases.

The report of the 4 cases of primary cancer of the lung in the Philadelphia General Hospital, found by Dr. McGlinn, is as follows:—

Case I.—White, female, aged 65; cancer of the lung, complicated with syphilitic disease of the liver and of the uterus, and with chronic adhesive pleurisy.

Case II.—Black, female, aged 34; cancer of the lung, complicated with fibroid of the uterus and adhesive pleurisy.

Case III.—White, male, aged 30; cancer of the right lung with metastases in the bronchial and mediastinal lymph-glands, liver, and left lung.

Case IV.—Black, female, aged 40; cancer of both lungs, miliary tuberculosis of both lungs, cavity in right lung.

Dr. Williams, of London, gives the statistics of 13,824 malignant tumors, among which he found only 17 cases of primary cancer of the lungs, or 1 in 814 cases, while Dr. McGlinn's results show 1 in 137 cases of cancer. I have met with 7 recognized cases of primary malignant disease of the lungs in forty-five years of practice. Two of these were in my private practice, 3 seen in hospitals, and 2 in consultation.

When we compare the frequency of pulmonary tuberculosis with that of pulmonary cancer we see a wide difference. Dr. Williams writes on this subject that "over 80 per cent. of all malignant tumors arose in locations where tubercles were seldom met with." On the other hand, the lung, whence such an immense number of cases of primary tuberculosis arise, "very seldom originates any form of malignant disease." He also says: "Considering the great frequency of both maladies, the comparative rarity of their coexistence is remarkable; and a certain antagonism is thus indicated which, however, falls short of absolute incompatibility." If the cause of cancer were atmospheric we would naturally expect that the lungs would be more frequently affected.

Statistics of my 7 cases of primary cancer and sarcoma of the lung are as follows: Males, 4; females, 2, and 1 male with sarcoma of the lung. With effusion, 4, and without, 3. On the right side, 6, and on the left, 1; 4 cases were tapped, and 3 were not. Tapping did not relieve 2; the other 2 were only slightly relieved, and only temporarily. There was marked dyspnea in 6 of the 7 cases. The average age of the cases was 52 years. The average age of Dr. McGlinn's cases was 42. Dr. Musser's 3 cases averaged 55; Ostrom had 7 cases between 47 and 69, and Ciuffini's cases averaged 42; of 74 cases, the age of his youngest was 30 years, and the oldest 71. Collectively they may be tabulated as follows:—

30 to 35	years	2
35 to 40	"	1
40 to 45	"	1
45 to 50	"	3
55 to 60	"	2
65	"	1
71	"	1

This table seems to show that pulmonary malignant disease occurs most frequently between the ages of 40 and 60, but we must remember that there are fewer people to die with it after the age of 60.

Complications.—The most common complications of pulmonary malignant disease are metastases in the surrounding tissue, most commonly the pleura, which is perhaps always affected. The pleura may be thickened or it may be full of sacculations or pockets, filled with clear or bloody serum. I have never seen the fluid free to move in the pleural cavity.

Symptoms.—*Loss of Flesh.*—The first symptom is often gradual loss of flesh without explainable cause (this continues generally to the end). It may begin two or three months or even six months before local manifestations appear. It is more likely to be present in carcinoma than in sarcoma.

Pain may be slight at first, or it may be very severe. It is generally in the side affected and gradually increases in severity. Sometimes it is fleeting. If the disease is situated in the right side the pain may be over the liver, or it may be in the right shoulder.

Dyspnea may occur very early and is often more marked than would seem warranted when it is compared with the apparent involvement in the chest. The dyspnea is much like that in gummatous disease of the lung, being more marked than appears justified by the physical signs. We may have occasionally great dyspnea without any lung or pleural disease, from cancerous disease of the bronchial glands, which become enlarged and exert such pressure on the main bronchus as to prevent the entrance of air into the chest; when this occurs in cancer of the lung, it may explain the great dyspnea in some cases. The breath generally grows shorter and shorter as the disease advances.

Nervous symptoms usually present themselves later, the patient gradually growing weaker and more nervous as the disease progresses.

Cough often appears as the first local symptom. It may be short, dry and unproductive; later on it may yield only a little transparent mucus, and still

later the expectoration may be mucopurulent or stained with bright-red blood. There is sometimes witnessed a type of blood-spitting that is so characteristic that I think a diagnosis may be made from it alone. This pathognomonic hemoptysis is a dark purple or red *globule of blood* encased in a transparent glazed coating or capsule and about the size of the end of the little finger. It is sometimes lobulated or may be rounded in form. The color is purplish red, like that of grape juice or dark currant jelly. The surrounding fluid is clear and unmixed with blood. This globula is usually raised with a single cough. I have noticed this expectoration among primary cases three times in 7 cases and several times in pulmonary metastases and I consider it pathognomonic of pulmonary cancer or sarcoma. I have in this way made diagnoses in a number of cases of metastatic pulmonary carcinoma and sarcoma, a diagnosis that proved to be correct upon autopsy. This peculiar hemorrhage I have never met with in any other disease. It occurs, I believe, only in this disease; so if you have a case with pulmonary or pleural symptoms and the appearance of this expectoration, you can, I think, at once make a diagnosis of malignant disease of the lung. I have never noticed the same expectoration of blood in any other disease, and it is generally, when present early in the disease, only preceded by emaciation and slight dyspnea.

As I have seen it, the *pleural effusion* of pulmonary cancer is peculiar; it is very irregular. The serum is contained in cysts or rather sacculations, which may be large or small,—usually one-half to eight or ten ounces. This condition may explain, at least in some cases, the little relief experienced after tapping, for all the fluid is never removed. The fluid is almost always tinged with blood, but sometimes it consists of clear serum, and, again, at times the blood is so pure as to coagulate when removed. The physical signs are those of a solidified lung, or those of pleurisy with effusion, or in both. Late in the disease there may be a bulging of the side from effusion, or from tumor of the lung, but this occurs, if at all, only near the end.

Late in the course of the affection, the diagnosis is generally more easily made, but not until the advanced stages. By keeping in mind the emaciation without apparent cause, the marked dyspnea, and the inability successfully to draw the fluid from the pleural cavity, a diagnosis may be almost certainly made; but with the expectoration of the blood in globule form, as already described, there can be no doubt of the presence of pulmonary malignant disease. In 1 case I noticed marked varicose veins at the base of the right chest and upper abdomen. I have also noticed in 1 case varicose veins at the side of the trachea, at the base of the neck on the side affected. In 2 cases I noticed unilateral sweating on the opposite side of the trunk. A diagnosis is generally readily made when the disease occurs secondarily to an operation, especially after the amputation of a breast, or when the disease is present in other organs.

Conclusion.—The following points should be emphasized: First, the early emaciation in true carcinoma, before any local symptoms. Second, the marked dyspnea. Third, the little if any relief obtained by tapping. Fourth, the expectoration of the globule of blood above described.

THE GENERAL TREATMENT OF HIGH BLOOD-PRESSURE.*

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THE general treatment of high blood-pressure would naturally include the treatment by manual methods, regulated movements, and neutral immersion baths, by the means of electricity, and by sodium nitrite; but as papers on each of these particular methods appear in the Symposium and will presumably discuss the methods in detail, they will not be considered under this head. General treatment may be divided into: (1) prophylactic, (2) curative, and (3) symptomatic.

(1) PROPHYLACTIC TREATMENT.

A regulation of the habits of the individual as to *diet, exercise* and *excretion* constitutes the prophylactic measures indicated. Many authorities have arrived at the conclusion that while regulation of the component parts of the daily ration is of value, a far more important factor is in the limitation of the amount of food consumed. For certainly we must all agree that the best preserved, the most healthy, as well as the least senile of our patients, are those who are temperate in their habits of eating and drinking. Nevertheless it is a fact that a non-nitrogenous diet, with a preponderance of fruits and vegetables, is desirable; while a certain limited number of observers prohibit milk, eggs, cheese, and other articles of diet which are rich in lime salts, and others are insistent that the limitations of the intake of proteins is a factor which should be considered of importance.

Modern, rational, and, above all, systematic *exercise* will do more to prevent sclerosis of the arteries, and its accompanying hypertension, even than a regulation of the diet. In addition to this, most active American business men should obtain at intervals, certainly once each year, the relaxation attendant upon a sea-voyage or a period in the actual country, away from the excitement of business and society. The digestive apparatus should be kept in the best possible condition and constipation avoided, or, if the latter be present, overcome rather by a regulation of the diet than the administration of drugs.

(2) CURATIVE TREATMENT.

Here we should pay our first attention to causation, such as gout, syphilis, the excessive use of alcohol, and overindulgence of all kinds; for, after all, we must admit that high blood-pressure is rather a symptom than a disease.

By far the most popular of all drugs used with the idea of cure is *iodine* in some form, given oftentimes to the point of toleration. While potassium iodide is probably most frequently used in this country, the greater number of

* Read as part of a General Symposium on the Etiology and Treatment of High Blood-Pressure, at the Thirteenth Annual Meeting of the American Therapeutic Society, held in Montreal, Canada, May 31 and June 1, 1912.

the French and German clinicians prefer sodium iodide, believing it to be better borne by the digestive tract; and, latterly, many so-called organic preparations of iodine have been introduced and highly recommended by the pharmaceutical houses which are sponsors for their birth.

Whichever of the salts of iodine is used, however, it is usually given in the form of a saturated solution, starting with 2 drops (which, of course, represent about 2 grains of the drug) three times each day, and each day the size of the individual dose is increased by 1 drop until 15 drops are reached, provided the stomach does not rebel. This dosage is then continued with occasional intervals of omission, a week or so at a time, for several years.

Balfour's method in the treatment of aneurism with attendant high blood-pressure he states to be as follows: "So soon as the average pulse rate in recumbency is accurately ascertained, 2 grains of potassium iodide are given every eight hours, and if the pulse rate remains unchanged the dose of iodide may be increased up to 15 grains or more every eight hours, raising it by 1 grain each dose until the pulse rate begins to rise. It is only rarely that we can increase the dose beyond 10 grains without this taking place. When the pulse rate begins to rise the iodide is stopped for one or two days, and then we go back to the highest dose that did not raise the pulse rate and continue the dose."

This use of iodine is often attended by unpleasant digestive symptoms, as well as other evidences of toxemia, and its value rests more upon empirical evidence than upon accurate measurement of the blood-pressure with a manometer. Its use is almost as strongly deprecated as it is highly commended. It is most desirable, in the use of iodine, to recollect that it should not be administered during the period of digestion, because not only is it theoretically a fact that iodine and starch produce an insoluble iodide of starch, but there are the disagreeable effects of iodine upon the digestive tract, too well known to need description here.

(3) Symptomatic Treatment.

Unfortunately most of our efforts must be directed toward relief, for the majority of our patients do not come to us until a distinct arteriosclerosis is established, and, as we have already seen, it is more often than not impossible to benefit them by curative treatment.

One of the most ancient methods in the treatment of high blood-pressure, as well as the most popular, was *venesection*, abandoned because of abuses attendant upon its use. Nevertheless, in appropriate cases it often gives brilliant results. Says Wilks: "You see your patient sitting up in bed, the face calm and lips blue or purple, and the jugular veins starting out of the neck and often visibly pulsating, the heart beating quickly and perhaps a tricuspid bruit, indicating the gorged right heart and obstructed lungs; the veins in the body are full to bursting." And here, as well as in uremia, eclampsia, and certain cases of cerebral hemorrhage, emphysema, and pulmonary engorgement, the removal of 10 to 20 ounces of blood will prove a most satisfactory remedial measure.

Results as gratifying to the physician as they are pleasing to the patient often attend upon the free use of *calomel* or the mass of mercury, followed by a brisk *saline purge*. These measures give relief not only by the withdrawal of fluid from the intestinal viscera, with a consequent lowering of arterial tension, but by the removal from the intestines of toxic material which, by its absorption into the circulation, increases the blood-pressure; to this, I am sure, each one of us can testify.

Where there is intestinal torpor, with decomposition of the animal food, the use of the lactic-acid tablets (*Bacillus bulgaricus*) may be employed with happy results, overcoming not only digestive disturbances and the accompanying borborygmus, but the secondary production of hypertension.

The promotion of free diuresis in certain types of cases where there is an inefficiency of the skin and kidneys and myocardial degeneration, with or without valvular disease, is often of great help. Here *digitalis* is of greatest value, notwithstanding the fact that primarily it increases the arterial tension, because of its effect on the heart as well as upon the secreting functions of the kidney. For the same reason *theobromine sodiosalicylate* is often helpful; and while the effects of this drug are, in the main, produced through an increased secretion by the kidneys, yet it has a direct effect upon the vasomotor center in the medulla, and thus, secondary to this, upon the blood-pressure. A combination of these two remedies has, at times, in my experience, given results which, to the patient at least, seemed almost miraculous.

For immediate effect upon hypertension, as well as for continued use over a long period, no class of drugs equals the *nitrites*, and, of these, that most frequently employed is what is generally, although improperly, spoken of as nitroglycerin. Unfortunately the effect of the nitrites is evanescent, and the appropriate dose must be repeated at frequent intervals in order to prevent the secondary rise in blood-pressure which usually follows its primary effect. The physiological effect of the nitrites is to relax the arteries through their influence on the vasomotor system, and, as is generally the case with all rapidly acting drugs, the primary effect is not only transient, but is followed by a secondary effect directly the opposite. In addition, if large doses are given over a long period (which is the best way to give these agents), we are in danger of lowering the blood-pressure to a point where the secreting function of the kidneys is unfavorably affected. For rapidity of action in extreme cases, amyl nitrite is the most efficient; but its fleeting effect, as well as its disagreeable smell, makes it undesirable for continued use. As has been noted, nitroglycerin is most in favor, but many careful observers are strong in their preference for sodium nitrite.[1] Erythrol tetranitrate has lately been much lauded, and it has the advantage of producing a more lasting effect; but it unfortunately is an exceedingly expensive drug for prolonged use, which is just what we need it for. It should be stated that the dosage of nitroglycerin, as well as the frequency of the dose, is many times greater than is commonly supposed. In this connection I cannot help but quote what Le Fevre says:

[1] Discussed elsewhere in this symposium.

"In the treatment of cardiac and renal diseases, the greatest danger, next to the abuse of digitalis, is the unjustifiable administration of the nitrites. High arterial tension is relatively a compensating condition, and it is to be treated only when it becomes excessive. The action of the nitrites is transient, and the use of large doses at frequent intervals is apt to produce increasing irritability of the cardiovascular system, and the patient is more liable to suffer from dyspneic attacks. There is also danger of the nitrites reducing the tension temporarily below the point at which the kidney secretion can be carried on." Not all cases where there is high blood-pressure demand or even admit a reduction of the tension, for as long as cardiac power compensates for obstruction in the circulation no special treatment is needed.

THE PSYCHIC EFFECTS OF ACCIDENTS.*

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(*Concluded from November issue.*)

Treatment.

The treatment is, as appears, rational knowledge of the genesis of the condition, and proper re-education of the patient's viewpoint through a profound understanding of his psychology. Assurance is useless without this knowledge. Indeed, rapid encouragement only antagonizes the patient. Honesty is the best, the only, policy.

The following case[2] clearly illustrates the procedure:—

A railroad brakeman was thrown through the giving way of a stirrup while his train was traveling at the rate of about ten miles an hour. He fell on the small of his back against a bank of earth, rolled over two or three times, and lost consciousness for over half an hour. After crawling about half a mile he was found. He felt sick all over, and brought up blood, which also came from the bladder and bowels,—only that day, however. After reaching his home town he was assisted to his house, one and a quarter miles away. He did not sleep that night, but rested the next morning. In the afternoon he became restless, and sticking pains occurred in the back; these lasted several days. He was up and about with a crutch in fourteen days, but shortly afterward he lost the use of his legs, having to move them with his hands; but he walked about on crutches, though he felt faint after progressing two or three squares. On account of anxiety and want of means he soon after went to live with his mother, his wife going to her father. When questioned, he replied, "Well, yes, I missed her;" but he stated that he was too preoccupied with his health to care much. About three months later he was able to hobble with a stick only, but his power to do so varied from day to day.

* Read by invitation at a meeting of the Southern Association of Railway Surgeons, held in Washington, D. C., June, 1912.

2 Int. Cong. Indust. Accidents, Rome, 1909; also in Med. Record, 1907.

He said he felt a buzzing and a severe pain in the head as well as in the back; these did not begin until one month after the injury. He worried much over his position and circumstances, the dependence of his wife, and the idea that he was unable to help her and his mother, who was an invalid with a younger boy to take care of (he wept while relating this). He never worried before his accident, but now he could not help it; for though he was owed $225 by an accident insurance company, they would not pay him anything. He did not know what to think about his health; for though the railroad doctor upon seeing him after the accident declared he would soon recover and be able to work, he had lost over 20 pounds in weight, had become very weak, had sore throat, a capricious appetite, and sallow skin, and wept nearly every day. Moreover, about ten days after the injury, two other doctors, called in by his family, each said independently of the other that he had a congestion of the spine, which, though probably temporary, might last a lifetime. He had a very severe "fainting spell" one day after a cold; but when interrogated he confessed to having eaten a large meal of sweet milk and coleslaw, and that this had been the only occasion since the accident upon which he had actually vomited, though he had often had a dull, sick feeling when overheated. He wished he had never seen a railroad, "meaning nothing detrimental to anyone but myself."

He had employed attorneys, who were bringing a claim against the company; he had asked for $2500 and employment, and had received much sympathy from his friends. When asked his object in this, he replied: "I will be frank with you and all. I was looking forward to promotion. It was no fault of mine that I was injured; if it had been, I would have said nothing. I merely ask for a sum of money and a job I could do. I could get around and do a job I could do, but I would never run railroad again; for in catching a box local, it means heavy weights all day, and I cannot gain promotion except through this." He thought he might do office work, though he dreaded it; for outdoor work suited him better than the confinement of bookkeeping; besides, a good brakeman could make a hundred dollars a month.

Upon examination, I found the tendon reflexes equal on the two sides and neither exaggerated nor unduly feeble. The cutaneous reflexes were all unusually active with the exception of the plantar, in which, however, the toes distinctly flexed upon several occasions, until inhibited volitionally. When I distracted his attention, flexion again occurred. Sensibility: A pinprick on the lower limbs was called a punch; cold steel was called warm, and the diapason was felt only when in full vibration. Cotton-wool was unfelt in front as high as the groin, and behind as high as the iliac crest on the right side, at first; but after the left side had been examined and found insensitive only as far as the gluteal fold, he confessed to feeling the wool on the right buttock also. When asked to say when he did not feel the wool, he said "No" the first seven times he was touched on various parts of the lower limbs, later ceasing to reply. The gluteal esthetic boundary varied by about two inches at different examinations. In the lumbar region, he was bilaterally hyperesthetic in a two-inch zone, shading off below and sometimes extending onto the buttocks. Posteriorly, the upper border of the zone corresponded to D. 12 and L. 1; laterally to D. 10-11, and anteriorly to D. 8-9.

The motor power was good. When he attempted to use the legs alone, he strongly tightened up the antagonistic muscles; but when his attention was diverted he could maintain powerful extension at the knee, even on the left side, though he declared himself weak there from an old dog-bite. Babinski's combined flexion, and Hoover's and Zenner's tests were all negative. The pupils were equally dilated, and responded promptly and vigorously to light and accommodation, but no pain reflex could be elicited. There was no loss of memory or other intellectual defect, although the affectivity was perturbed as described.

It should be evident that the incapacity of this man arose from the fixed idea, very probably inculcated after the accident by his friends, although contributed to largely by the common belief of railroad employés, that an

accident can induce serious nervous disease. The doubtful prognosis of the doctors, evidently unskilled in neurological diagnosis, strongly fortified the man's belief and consequent anxiety. The anesthesia, produced by previous medical examinations, might have deceived an inexperienced observer; but the wool test, which had not previously been performed as I performed it, quickly revealed not only an "uneducated" line of demarcation, but demonstrated that the man did feel by the very fact that he said he did not. Of course, even had I not succeeded in thus demonstrating the incongruity of the syndrome with the neuropathology of the spinal cord, the complete conservation of all the reflexes was sufficient to show that the anesthesia did not arise from disease of the spinal cord.

The diagnosis, then, was *hysteria,* the psychic elements of which were clearly revealed in the foregoing history. The prognosis given was favorable; but I first explained to the patient and doctor separately the real genesis of the disorder, showing the former the effects of worry and anxiety upon bodily nutrition, and the rôle of ideas over bodily activity.

The treatment[3] I recommended was the re-establishment of good nutrition, regular exercise, removal of grief and worry by the assurance of a reasonable compensation for the anxiety and loss he had suffered (for though his ideas were erroneous, and he was in one sense of the word a simulator, he was so unconsciously, and because of the environmental beliefs he had acquired), and the declaration that by following my treatment he would be capable of moderate work in a few weeks, and in a short time would be entirely restored to health. Being asked for a certificate, I gave the following to both patient and doctor: "This is to certify that I find Mr. V. to be suffering from a condition of incapacity for free walking or mental or physical work from the effects of a fall from a brake car (as I am informed). This state is induced, as a result of the aforesaid accident, by the worry, anxiety, and loss of means directly caused thereby. I believe that by appropriate treatment he could be restored to a certain extent within one month, and that within three months he could be fully capable of pursuing any laborious avocation he chose. He is, however, at present in too low a state to be capable of long, continuous labor, even though the incapacity of his limbs were immediately removed. There is, and has been, no disease of the spinal cord or peripheral nerves at play in the induction of any of the symptoms which I find. The erroneous belief that there has been such an injury powerfully contributes to the anxiety which maintains his present state."

As to the outcome, a letter from the doctor a few days ago stated, in reply to my query, "We compensated V. by a sum of six hundred dollars, and he went back to work on time just as you predicted." *Naturam morborum curationes ostendunt.*

3 For details regarding the principles of the treatment of hysteria, see author's paper to Neurological Section, American Medical Association, which is to appear in Journal of the American Medical Association, Dec., 1912. References are there given to other writings, among which "The Treatment of 10 Cases Without Minute Psychoanalysis" is most pertinent to the present question. Also Washington Med. Annals, Jan., 1912; Post-Graduate, June, 1912.

The replacement of this morbid feeling tone by another cannot be direct, but must be accomplished by replacement of the causative idea by another, and this is what, indeed, the psychotherapist does in the gastric neurosis. But in traumatic cases the litigious element prevents this; for the patient is suspicious of everyone who does not accede at once to his fixed idea that he is incapacitated; and medical men as a whole are not noted for the psychological *finesse* required in approaching such cases. Hence, access, even if gained, is quickly lost, except by the medical men whose belief concords with that of the patient; and these, believing as falsely as he, are as helpless to cure him.

It must be remembered, too, that mere affirmation may prove a very poor appeal; for a cold, intellectual acceptance is not enough to change an attitude of mood which has been assumed for any considerable time. Intellectual acceptance must entrain immediate action, whether emotional or not; for the whole bearing of the patient's mood must be orientated toward a desired idea—that of disappearance of the hurtful idea-emotion complex. Thus, I obtained the active consent of my patient and he was invited to dine with his doctor that night, made to feel optimistic, and then taken home and the settlement clinched at once.

It is clear that the return of this man's functional capacity was the result of the enlightenment and persuasion he received during our interview, seconded by his physician, who saw that immediate action followed an intellectual conviction which might not have been maintained against the counter-suggestions he would have again received in the environment of invalidism which had grown up around him. It must be remembered that patients with a fixed idea become aboulic where other matters are concerned. Thus, Brissaud remarked of a patient who went into a fit when they gently attempted to extend the contracture of a limb which had lasted five years since the railway accident: "This contracture is his life." Misoneism, the impossibility of adaptation to unusual conditions, is common enough, and its intensity is proportional to the length of time during which the mental habit has persisted, as well as to the affection, so to speak, with which one's habit or defect has been cherished and the age at which it has been acquired. In such persons conviction soon becomes inert if allowed to sleep.[4]

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[4] The psychological processes which develop traumatic hysteria are analyzed by the author in Journal of Abnormal Psychology, June, 1910. It is necessary to understand these fundamentals before proceeding to the removal of the condition in a given case. To attempt it without this knowledge corresponds to entering an abdomen without an understanding of surgical principles and technique. The issue will not be favorable to the patient and future intervention will be handicapped in advance.

THE EFFECT OF ALTITUDE IN HEART DISEASE.

By SAMUEL McCLARY, III, M.D.,

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One of the troublesome questions which every physician who advises change of altitude to a patient is: How will this change affect some member of the family who has some affection of the heart?

This subject may also become a matter for serious consideration in regard to the question of who should or should not engage in aëronautics. Probably some of the aëroplane accidents have been due to inability of the operator to control the aëroplane at high altitudes on account of dilatation and lack of compensation of the heart, thus inducing syncope and inability to control the machine.

Dr. Loomis, in 1886, wrote a paper giving several fatal results following improper ascent to even moderate altitude on the part of patients with organic heart disease. For the purpose of making the discussion clear and exact we will assume the altitude in question to be from four thousand to ten thousand feet, and will consider the principal cardiac diseases which may present themselves for our decision.

I. *Cases of Valvular Disease with Sufficient Cardiac Enlargement or Derangement of the Circulation to Permit of a Positive Diagnosis.*—While a great difference in risk in such cases must be admitted, in accordance with the age, degree of compensation, etc., it is safer to forbid the change to such patients, for we know that in any case, even at sea level, compensation may suddenly cease, and of course this is more liable to happen in a change of altitude of four thousand or more feet.

II. *Cases of Chronic Myocarditis or Fatty Cardiac Degeneration.*—These should be rigidly excluded, and are the cases about which most care should be exercised. They are the ones among which there occur sudden fatalities as the result of apparently slight variations from the dull routine of daily life. A sudden change of the conditions under which the heart is laboring arrests its action altogether. This change may be one of atmospheric pressure, of nerve influence, a sudden shock or excitement, mental or physical.

Many of these cases on superficial examination have been declared sound, chiefly because no cardiac murmur was discovered, when a more careful examination would have resulted in a probable diagnosis of the above-named conditions. A careful examination should always be made of the area of cardiac dullness. It will often be found enlarged in cases of chronic myocarditis. The character of the first sound at the apex should be carefully studied. A very valvular first sound, an almost complete loss of the booming muscular quality, with a weak or irregular pulse, in a man who is no longer young, especially in connection with the subjective symptoms, points to myocarditis or fatty degeneration. Breathlessness on slight exertion, with a feeble, irregular pulse, are strongly confirmatory signs. This is a variety of case which it is

much more important to keep away from high altitudes than even those of valvular disease.

III. *Cases Presenting a Murmur Anywhere in the Cardiac Area, but in which No Symptoms Have Ever Been Present, and which on Physical Examination Show No Evidences of Myocardial Disease.*—This type of murmur is fast losing the undue importance which it has held for many years, and falling into its proper place as one link in the chain of evidence. Even insurance companies accept some applicants with cardiac murmurs. Patients with systolic murmurs which are known to have existed many years without any enlargement of the heart or any alteration in its normal sounds, may be allowed to proceed to high altitudes.

Patients with diastolic murmurs, however, are to be advised against such an ascent, as these murmurs are more surely indicative of serious organic disease.

IV. *Cases of Nervous Palpitation.*—Patients with functional palpitation cannot all be considered in one class. In many the condition is temporary, being due to errors in diet or mode of life which can be easily corrected. When these errors have been rectified there can, of course, be no objection to high altitude. Affections of this kind, due directly to morbid conditions of the nerve-centers, may be divided into two classes: (1) that of patients who are naturally possessed of a nervous temperament, and (2) those who are nervous from malnutrition. The latter are likely to be improved by and may be recommended to try high altitude; but the former, those of inherent nervous temperament, are usually made worse by it, and consequently should be forbidden high altitude.

A question which now naturally suggests itself is: Why and how does altitude affect the heart?

The immediate cause of dyspnea and cardiac failure may, I think, be traced to diminished pressure on the heart walls and their consequent dilatation. At sea level the external atmospheric pressure exerted against the interior of the lungs is equal to that of a column of mercury 760 mm. high. It distends these organs, and pushes them against the chest walls, heart, great blood-vessels, and other thoracic contents. The pressure thus exerted on the heart is not equal to that of the external air, since the elasticity of the lungs, equal to a column of mercury 6 mm. high, has first to be overcome. Hence, the actual pressure on the heart and great vessels is equal to 754 mm. of mercury. Now, how is this pressure changed at an altitude of ten thousand feet? The pressure of the external air at this altitude is equal to 501 mm. of mercury. The pressure, then, on the lungs and body would be lessened. There would be a slight fall in blood-pressure. But this is only temporary, for, the circulatory apparatus being a system of closed tubes, it is but little if at all affected, and the blood-pressure soon rises to normal, owing to increased vasomotor action. There would be no increase in negative intrathoracic pressure. Finally, the only organ affected at moderate altitudes would be the heart, and this for the following reason: as we have said, the normal atmospheric pressure on the heart at sea level is 754 mm.; at an altitude of ten

thousand feet it would be 501 mm., minus 6 mm. due to the elasticity of the lungs, or 495 mm.—a difference of 259 mm. Now, the arterial pressure and therefore the intracardiac pressure would be the same as when at sea level, or 754 mm. Only one result could follow these conditions, and that would be a stretching and dilatation of the heart walls, especially on the right side, as these are the thinner; and this is precisely what is found in many who go into high altitudes. It is not so noticeable in the case of strong, healthy hearts; but in those organs that are already weak and diseased before the change is made we find that they are unable to stand such strain as is put on their dilated walls. Thus occur the murmurs, syncope, and dyspnea which are so often marked in high altitudes.

Now, what is the physiological effect of the diminution of pressure?

1. There is greater or less dilatation of the great veins, with consequent increased blood-flow from the periphery and a probable increase in the capacity of the right heart.

2. There is a dilatation of the thin-walled pulmonary vein, for there is but little positive pressure within its walls, and want of pressure would immediately be felt.

3. On the other hand, the pulmonary arteries are practically not affected, two factors contributing to this, viz.: their comparatively thick, unyielding walls, and the abnormal positive pressure.

4. The left heart is not affected by the diminution of pressure on account of its thicker and stronger walls.

The increased capacity of the right heart, owing to the increase in the blood going to that side, would cause an increase in the capacity of the pulmonary veins, then an increased flow of blood through the lungs and to the left heart, and hence an acceleration of the heart rhythm and an increase in the blood-pressure which would immediately cause dilatation or failure of compensation in a weak heart subjected to a lessened external pressure.

Cyclopedia of Current Literature

ABDOMINAL AORTITIS, ACUTE.

This condition is regarded by the authors, in opposition to the views hitherto expressed, as an affection entirely distinct from and unrelated to chronic inflammation of the abdominal aorta.

Symptoms.—The symptomatology is complex and tends to confuse the physician chiefly for the reason that it is the unessential symptoms which are most prominent, while the characteristic ones are not at once apparent unless systematically sought. Among the accessory symptoms, pain predominates, is the first to appear, and may for some time be the sole manifestation. It often appears suddenly, rapidly becomes intolerable, so that the patient sometimes cannot even bear the weight of bedclothes on the abdomen. It is definitely paroxysmal in type, taking the form of violent cramps in various abdominal viscera and simulating enteralgia, gas-

tralgia, hepatic or renal colic, and appendicitis, though it may sometimes be localized along the spinal column and radiate to the lower limbs, genitalia, or throughout the abdomen. During the paroxysms there are pallor, angor, profuse perspiration, vertigo, and a tendency to syncope; the attacks may last from a few minutes to several hours or even days, and, when they are past, abdominal tenderness remains. Gastrointestinal symptoms of very variable intensity and various reflex disturbances, such as marked dyspnea, cardiac intermittences, etc., may accompany the pain. Especially striking are the periods in which a sensation as of arrested circulation in the abdomen is experienced, at the termination of which there is a sudden forcible blow, with acute pain.

The above phenomena are striking but ambiguous. The most significant information is furnished by the following triad of symptoms, first formulated by Potain: (1) Aortic pain. Where the patient cannot himself localize the pain accurately, palpation at a point generally above the umbilicus, but sometimes below it, or even over the iliac and femoral arteries, causes intense distress, and may induce alarming reflex disturbances. (2) Broadening of the aorta, easily recognized, according to Teissier, but considered difficult of observation by most others, unless, the abdominal wall being thin, the vessel can be gently seized between two fingers, or the X-rays furnish satisfactory evidence. (3) Deviation of the aorta, which forms a curve having its concavity always directed toward the spinal column, the middle of the vessel generally becoming displaced toward the left. Its pulsations are in some cases observable upon mere inspection of the abdomen.

A double murmur, propagated toward the iliac arteries, is sometimes audible over the vessel, or a slight systolic murmur may be elicited upon gentle compression of the aorta with the stethoscope. Other useful signs are: muscular rigidity, a rise of temperature,—sometimes limited to an excess of the rectal over the axillary and buccal temperatures of 1° to 2° C. (1.8° to 3.6° F.),—and, especially, hypertension in the dorsalis pedis artery, which, while normally showing a blood-pressure 20 to 30 mm. less than in the radial, in this affection constantly equals or exceeds the radial pressure.

Prognosis.—This is variable. The condition may disappear in a few days, or drag on for two or three months. In no case, according to the authors, does it pass into a chronic aortitis; nor has any case of acute abdominal aortitis caused death, though various complications, such as painful gastric or intestinal crises, mucomembranous enterocolitis, and rarely nephritis, embolism, or threatening gangrene of the foot, may occur. In certain cases, after apparent complete recovery, the condition recurs.

Diagnosis.—The conditions to be excluded are hepatic and renal colic, gastralgia or enteralgia, adnexal inflammations, gastric crises in tabes, enterocolitis, appendicitis, aneurism of the abdominal aorta, and the "pulsatile aorta" of neurotics. In all cases the more striking accessory symptoms are to be excluded from consideration, and the less evident pathognomonic symptoms, including hypertension of the dorsalis pedis, carefully sought.

Etiology.—Primary acute abdominal aortitis is rare, though Teissier asserts that he has met with several such cases in his practice. It may appear either without apparent cause of any kind or as a sequel of overwork, repeated mild

traumatism, or exposure. Among infections influenza and acute rheumatism most frequently precede the condition; one of the authors has seen it occur at the close of a mild case of scarlet fever. Abdominal aortitis "by extension," *i.e.*, secondary to inflammation of the thoracic aorta, is likewise rare. Most commonly the condition arises "by propagation" from inflammation of adjoining viscera, especially the intestine, small and large, including the appendix, and the stomach and gall-bladder.

Treatment.—This must be prompt, if results are to be obtained. Absolute rest in bed, either in the horizontal or the half-sitting position, whichever gives the less pain, is essential. Repeated application of hot compresses to the abdomen, of a belladonna and mercurial ointment, of leeches and blisters, and, in protracted cases, of the hot iron should be availed of to relieve distress. The cause of the condition, *e.g.*, acute rheumatism or some gastrointestinal condition, must be appropriately treated. The paroxysms of pain demand vasodilators, such as amyl nitrite, 4 or 5 drops inhaled; sodium nitrite or, better, nitroglycerin, 4 or 5 drops of the alcoholic solution in the twenty-four hours, and nerve sedatives, such as strontium bromide, 15 to 30 grains (1 to 2 Gm.) daily, given by mouth or rectum, with or without valerian. Castaigne and Gouraud recommend the following:—

℞ Ammonium bromide, gr. lxxv (5 Gm.).
Infusion of valerian, f℥iv (125 c.c.).
Tincture of opium, ♏x (0.6 c.c.).

M. Sig.: For an enema.

Belladonna in syrup or pills may also be given. Bénech advises the use of valerian alone, to which are merely added sulphonmethane or veronal to insure sleep at night. Convalescence should be carefully watched and a broad protective belt prescribed for subsequent use. Minet, Leclercq, and Holleau (Echo médical du Nord, October 13, 1912).

ABSCESS, SPONGE COMPRESSION IN TREATMENT OF MAMMARY.

Good results are obtained by treating an acute mammary abscess by Mundé's sponge compression method. A large, flat, coarse bathing sponge is hollowed to admit the breast, is freed from foreign matter, and treated with hot phenol solution. The abscess is opened over the seat of fluctuation by an incision radiating from the nipple, the pus evacuated, and the abscess cavity washed out with a mild antiseptic or saline solution. The sponge is then dipped in hot sterile or carbolized water and wrung out in a towel. It is then placed over the breast, the walls of the cavity being held in apposition; is covered with oiled silk, and is evenly and firmly compressed against the thorax with wide rubber bandages. This dressing is changed daily, and the sponge cleaned, but the abscess cavity is not interfered with. By this method the abscess cavity can be kept free from pus and serous accumulations, and the walls of the cavity held in apposition, inducing fresh granulations to unite and thus close the cavity.

A breast treated in this manner will be ready to resume its function in from seven to ten days. This treatment is, however, applicable only to fresh abscesses with healthy, granulating walls. John Edward Dearden (American Journal of Surgery, October, 1912).

ARTERIAL TENSION, SOME CLINICAL ASPECTS OF ABNORMAL.

Functional high pressure is treated by the author with the hippurates, which he looks upon as safe and sure depressors of tension. The particular action of

this remedy was discovered by Oliver. The author uses the hippurate of ammonium and that of lithium; the latter salt is the stronger but the more depressing. In ordinary cases of high blood-pressure these salts reduce the arterial tension, never upset digestion, and do not cause unpleasant symptoms, unless an excessive dose has been given and the tension reduced too quickly. Their action is more lasting than that of the nitrites. In any ordinary case of high tension with dilated heart a cure can be readily affected by giving a hippurate in conjunction with strophanthus, the latter drug being preferable to the other cardiac tonics, as it acts but little on the arterioles. The dose of the hippurate given should be small; 5 grains are considered by the author a full dose, and he rarely gives that more than once a day. The hippurate of ammonium is borne better by old people, but the dose must be larger. Most cases of high tension in old age, when the arterioles are markedly atheromatous, are best left alone, the patient's life only being regulated.

In spasmodic asthma, even in cases with markedly high tension, the most quickly acting measure, with the exception perhaps of a hypodermic injection of morphine, is an injection of epinephrin solution. The author has found that asthmatic attacks are fewer and milder when the tension is kept down. For the relief of the paroxysms he usually gives 5 minims of the standard epinephrin solution in 10 minims of sterilized saline solution.

In cases of Graves's disease with marked dilatation of the heart and murmurs, a period of very low tension often comes on. Good results may be obtained by giving suprarenal preparations and strophanthus. The drugs must, however, be given for a long time and only gradually left off.

The hippurates are easily soluble, and can be given conveniently in 1- or 2-grain tablets.

In ordinary cases 3 or 4 grains of the hippurate of lithium may be given daily and 6 or 7 grains of the ammonium salt. In a few days, the dose can be lessened steadily, till a dose every second or third day is enough to keep the tension normal. T. Bodley Scott (Practitioner, August, 1912).

CATARRHAL JAUNDICE, TREATMENT OF.

The use of water as a diuretic, two large glassfuls being taken in the morning on rising, and that of cold enemas, administered twice daily to stimulate the flow of bile, are urged by the author. Where the cold enemas are objected to by the patient, tepid enemas may be employed.

Since putrefactive processes in the intestine may play a rôle in the production of the condition, an antiseptic such as benzonaphthol, 15 to 23 grains (1 to 1½ Gm.) daily, should be prescribed from the outset. After a period of some days, varying according to the intensity of the jaundice, but averaging about a week, calomel may be given in doses of 3 to 7½ grains (0.2 to 0.5 Gm.) in the morning before breakfast, repeated every three to five days. The author believes this drug preferable to the saline purgatives sometimes recommended.

If upon using the calomel, or even before, the stools begin to show a return of color, bile extract, 4 to 6 capsules daily, will often give decidedly gratifying results, increasing the biliary discharge into the intestine and hastening the disappearance of the jaundice. Where the condition is accompanied by symptoms indicative of injury to the

liver cells, such as hemorrhage, pills each containing 4 grains (0.25 Gm.) of liver extract should at once be started; 4 to 8 may be given daily.

At the termination of catarrhal jaundice, *i.e.*, in the third or fourth week, hexamethylenamine and sodium salicylate may be prescribed to keep up antisepsis of the biliary tract. These drugs are also indicated earlier in the course of the disease if there is fever suggesting the presence of infection. The former may be given in cachets in doses of from 23 to 45 grains (1.5 to 3 Gm.) daily, the latter either by mouth or rectum, 30 to 45 grains (2 to 3 Gm.) a day.

In some cases the liver remains congested and enlarged after the jaundice has disappeared. The beginning of a chronic hepatitis or of cholelithiasis is then to be feared, and the patient should be ordered to drink Vichy water before each meal, and if practicable to make a sojourn at some watering-place in the succeeding summer. Instead of the Vichy water, the following combination, advocated by Bourget, may be taken in doses of 1 wineglassful an hour before each meal:—

℞ Sodium bicarbonate, pure, 3ij (8 Gm.).
Sodium phosphate, anhydrous, 3j (4 Gm.).
Sodium sulphate, anhydrous, 3ss (2 Gm.).

M. Sig.: To be dissolved in a quart (1 liter) of cold boiled water.

Patients should be restrained from returning to their avocations too soon after convalescence, and should be seen again a few weeks after apparent recovery.

In prolonged catarrhal jaundice the same measures should be continued. If the biliary obstruction then gradually disappears the diagnosis is confirmed; if not, the presence of some more serious condition, such as lithiasis or neoplasm, should be thought of, and the symptoms of these carefully examined for.

Pruritus in jaundice may be combated by washing the surface morning and evening with hot water containing alcohol, vinegar, or a little phenol, followed by the application of inert powders or an ointment of zinc to which a little menthol has been added. Small doses of thyroid substance internally have been advised by Gilbert and Herscher. Hemorrhage requires the administration of hepatic substance and calcium chloride. P. Lereboullet (Paris médical, September 14, 1912).

DIGITALIS AND THE BLOOD-PRESSURE.

The authors studied clinically the effect of digitalis on the blood-pressure, in order to justify or disprove the statement sometimes made that this drug is contraindicated in cases with hypertension. The pressure was taken in 47 subjects, some normal and the others suffering from some cardiac disease, before, during, and after the administration of digitalis, which was given as the French official 1:1000 solution of crystallized digitalin, in doses of 10 to 30 drops for several consecutive days. The general conclusion reached was that digitalis apparently acted in an irregular and variable manner according to the nature of the case. But it was noticed that the variations did not depend upon the amount administered and, in fact, occurred even after the drug had been stopped or in those that had not yet taken it. In patients whose pressures had been carefully taken for several days before the ingestion of digitalis, the variations in pressure were neither greater nor less after than before the medication. From these facts the authors conclude that digitalin, even in repeated full doses, does not affect the blood-pressure, except

in cases with myocardial weakness, where the pressure is raised to its previous level owing to the beneficial effect of the drug on the heart muscle. One should not hesitate to use digitalin in cases with arterial hypertension. Josué and Godlewski (Société médicale des hôpitaux; Semaine médicale, November 13, 1912).

ECLAMPSIA, TREATMENT OF.

According to the author, the treatment of this condition must be directed toward certain definite ends.

Prevention of further absorption of toxins is accomplished by emptying the uterus by the method giving the least degree of shock. The author believes that the operation of abdominal Cesarean section should not be performed in this condition unless there is disproportion between the size of the infant and the pelvic canal, vaginal Cesarean section or dilatation of the cervix followed by forceps delivery or version being preferable.

The first step toward limiting the damage done by the toxins already absorbed may be accomplished by reducing the high blood-pressure. Of the drugs used for this purpose the author prefers morphine hypodermically. He gives ¼ grain of morphine, repeating the dose in an hour, or sooner if necessary; later, he gives ⅛ grain every hour until slowing of the respiration shows that the drug is effective. His object is to lower the respiratory rate to about twelve a minute and to hold it so for twenty-four hours, repeating the morphine whenever the respiration shows a tendency to rise to normal, on the hypothesis that convulsions will seldom or never occur in a patient who is kept constantly under the influence of this drug.

The author believes free catharsis to be the most important element in the promotion of the excretion of the toxins. Therefore the patient's stomach is washed out before she is removed from the operating table and 1 to 2 ounces of a saturated solution of Epsom salts is left in the stomach, the salts being repeated at intervals when the patient can swallow. High colonic flushing and 1-drop doses of croton oil are also given.

The treatment of any serious condition must be the treatment of the individual as acted on by the disease and not the treatment of the disease by a fixed rule. The author prefers the use of ether as an anesthetic in these cases. Franklin S. Newell (Surgery, Gynecology and Obstetrics, August, 1912).

EXOPHTHALMIC GOITER, ANATOMICAL AND PHYSIOLOGICAL EFFECTS OF IODINE ON THE THYROID GLAND OF.

As yet neither specific nor constant anatomical changes in the thyroid of exophthalmic goiter have been demonstrated, although out of 137 cases examined by the author about three-fifths showed some degree of hyperplasia, and it is believed that the proportion of glands showing active hyperplasia at the time of operation is greater in a series of exophthalmic goiters than in ordinary goiter.

As far as is at present known, the iodine content, the storage of iodine in the gland, and the involution of active hyperplasia by the use of iodine are identical with those iodine relations common to other clinical associations.

The thyroid of exophthalmic goiter has no different pharmacological action on animals or therapeutic action on myxedema or toxic action on patients with exophthalmic goiter than thyroid preparations from other clinical associations with like iodine contents. David

Marine (Ohio State Medical Journal, July, 1912).

GASTROINTESTINAL CONDITIONS OF NURSLINGS, MERCURY IN TREATMENT OF.

In a series of 200 cases, the author found that, in 35 to 40 per cent., bichloride of mercury, administered to the nursing mother in doses of $\frac{1}{32}$ grain (0.002 Gm.) three times a day, had a decided influence upon the gastrointestinal condition and nutrition of the infant. Vomiting, when not due to overfeeding or organic disease, ceased as a rule within twenty-four hours after the treatment was begun; diarrhea was always markedly improved, the frequent, foul-smelling stools containing undigested curds being rapidly replaced by the normal ones. Constipation was in like manner improved by diminishing or increasing the amount of mercury given to the mother. Colic was benefited and the weight was improved in many cases.

This treatment is indicated in any gastrointestinal disturbance of the nursling. It is a harmless procedure even where no benefit results. The effect of the drug upon the non-syphilitic mother is practically nil, while in the syphilitic mother it improves the general condition. S. V. Haas (Archives of Pediatrics, July, 1912).

GIVING DRUGS TO INFANTS AND CHILDREN.

Palatability and freedom from disgusting and irritating qualities are of the first importance in prescribing for a child. At times it may be found necessary to sacrifice what may seem to be therapeutic efficiency for the sake of palatability, but this will depend upon the knowledge or skill in the art of directing how to make a mixture acceptable.

The U. S. P. and N. F. provide a number of medicated waters, elixirs, and syrups designated especially as flavoring solutions, which, with the aid of judgment, may be used as diluents for the potent and disagreeable drugs. Among these flavoring solutions may be mentioned aqua anisi, aqua chloroformi, aqua aurantii florum, aqua fœniculi; elixir adjuvans, digestivum comp., aromaticum curassao (N. F.), and eriodictyi aromaticum; syrupus acaciæ, aurantii, aurantii florum, calcii lactophosphatis, and eriodictyi aromaticus (N. F.). The judicious use of any one of these will disguise almost all of the otherwise disagreeable remedies.

Powders, especially bulky powders, should not be prescribed for children, as they are difficult to administer, are easily spilled, and are frequently thrown out of the mouth by the average rebellious child and lost. A nearly or quite tasteless powder, as calomel or chalk, may be mixed with an infant's food and given in this way, if he takes food other than the breast.

The most difficult drugs to disguise are the very bitter ones, such as the quinine salts, creosote compounds, ichthyol, and camphor. For this purpose, the aromatic syrup and elixir of yerba santa, and adjuvant elixir, are the best, while the quinine salts will be taken with little difficulty if rubbed into a paste with spirits of chloroform and then suspended in one of the liquids just mentioned.

Creosote carbonate may be rubbed up with sweet almond oil and then shaken with equal parts of aromatic syrup of yerba santa and water. Elias H. Bartley (Long Island Medical Journal, October, 1912).

INFLUENZA OF INFANCY, RECTAL ADMINISTRATION OF SALICYLATES IN.

In the influenza of infancy, particularly in those cases in which pleurisy develops, the author has found the use of the salicylates to be followed by good results. He gives them by rectum in order to avoid the disagreeable gastric symptoms produced when they are taken by mouth.

Aside from sustaining the heart, he uses quinine and methylene citryl salicylic acid (novaspirin), incorporating them into suppositories with oleum theobromatis. One suppository is introduced every six hours, the bowel having first been cleansed with a saline injection. The absorptive power of the rectum is practically 4 per cent. and, as in the case of all rectal medication, the dose must be larger than it would be by mouth.

The author has never seen any untoward effects from this method aside from the expulsion of the suppository, and this may be prevented by compressing one buttock against the other for a short time after its introduction.

The patient usually finds relief after half an hour, sinks into a quiet sleep, generally with a slight perspiration over the body, and the anorexia usually disappears in twenty-four hours so that a milk diet may be given without fear. George Wesley Beatty (Medical Record, August 3, 1912).

IODINE STERILIZATION OF SKIN.

Bacteriologically and histologically, iodine painting is superior as a skin disinfectant to "scrubbing up," and clinically it has been found to be at least as reliable.

The official U. S. P. tincture (7 per cent., or half that strength) may be used, but the skin should be free from moisture when it is applied. Washing of the parts should, therefore, occur several hours before the operation, and shaving attended to at the same time or done "dry" on the table. Before painting the skin, moisture should be removed with benzine, alcohol, or ether.

Propping expressed the belief that this method of skin sterilization was responsible for postoperative intestinal adhesions by contact of the gut with the skin and with iodine-stained towels. Although this fact is not generally supported, care should be taken to protect exposed coils of intestine from contact with the iodized skin, and further experience may show that it would be best not to use iodine when much intestinal exposure is anticipated.

Again, iodine dermatitis may occur in those individuals who show an abnormal susceptibility to that drug. The occurrence of this condition can be prevented in most cases by using the iodine only once and in a single coat, and by washing off the skin, after the operation, with alcohol.

Iodine skin sterilization is inadvisable in hyperthyroidism, in individuals with a sensitive skin, on the face, and on the genitalia. W. M. Brickner (American Journal of Surgery, October, 1912).

LARYNGITIS, TUBERCULOUS.

Locally, the author has derived the best results in these cases from a fresh 3 to 5 per cent. solution of formalin. The larynx should be first cleaned with an alkaline solution, and then a cotton swab saturated with the formalin rubbed over the surface. The burning sensation following is not especially painful except in the most advanced cases and may be prevented by applying cocaine beforehand. The throat feels clearer, and in many cases the cough is eased by this treatment. The author has seen early

cases clear of any signs of laryngeal trouble in one week, but the average case generally extends over a period of several weeks or months.

The action of the formaldehyde on the area involved causes a fibrous encapsulation of the tuberculous process, walling it off or destroying it by a slow process of fibrous transformation. As long as these areas remain in a quiet condition no trouble need be feared, but if this protective wall is broken down the old focuses will invade new areas, and recurrences are as a rule more severe and harder to conquer than the primary lesions.

When an irritating cough is present good results may be obtained from intratracheal injections of guaiacol, menthol, camphor, and eucalyptus with a base of olive oil, 2 to 5 c.c. being used. Guy H. McFall (Journal of the Michigan State Medical Society, July, 1912).

MOTOR FUNCTION OF STOMACH, A SIMPLE METHOD FOR TESTING.

The following method, used by the author for testing the motor function of the stomach, is simple and may be performed in the office with little or no discomfort to the patient. Preferably on an empty stomach, the patient swallows a duodenal tube or pump as devised by Einhorn. As soon as the tube enters the stomach 2 or 3 c.c. of the gastric contents are withdrawn in order to determine the reaction, which is usually acid. The patient is then requested to lie upon his right side, and, at the end of one hour, 1 or 2 c.c. are again withdrawn. If the reaction is alkaline, it is then known that the tube has passed the pyloric orifice. Some idea as to the activity of the motor function may thus be formed, and quite a definite idea can be had as to the size of an object that may pass into the small intestines in cases of suspected stenosis.

If the reaction is acid at the end of the hour the examination is repeated at twenty-minute intervals until the tube has reached the gut, and the conclusion as to the degree of insufficiency or stenosis depends upon the time required for the tube to pass from the stomach to the small intestine. S. T. Lowry (Medical Times, October, 1912).

PROSTATECTOMY, STOVAINE SPINAL ANESTHESIA AS AN AID TO.

The results of operations performed by the author in 30 consecutive cases of adenoma of the prostate show that in those cases in which there are no signs of renal failure, the bladder muscle being still active, an operation carefully performed is almost without risk, stovaine or chloroform giving equally good results. If definite signs of renal failure are present, the risks of prostatectomy are considerable; but they can be diminished by the use of stovaine spinal anesthesia. In those cases of enlarged prostate in which there is a large, leaky bladder it is doubtful if operation should be advised.

No bad effects of stovaine are seen unless the anesthesia ascends above the seventh segmental nerve. About 0.005 Gm. should be used, injected between the third and fourth lumbar vertebræ. The Trendelenburg position should not be adopted, but the pelvis and shoulders of the patient raised so that the lower dorsal and upper lumbar regions of the spine lie at the lowest point; the drug will then also accumulate there.

The advantages of stovaine spinal anesthesia are: that it lessens the chance of shock; that the cells of the viscera are not subject to the prolonged action of a poison such as chloroform;

that there is less risk of lung complications, because the patient can be placed in the Fowler position at once, and that the risks of pyelonephritis and uremia are reduced, because the kidney-cells have not been destroyed as extensively as they are when chloroform is used. Frank Kidd (American Journal of Dermatology, August, 1912).

QUININE SALTS, CARDIAC EFFECTS OF.

Action of the various quinine salts on the isolated heart of the tortoise investigated. The salts used were: the hydrochloride, citrate, valerate (valerianate), hydrobromide, and neutral sulphate. Small amounts of quinine were found favorable to the heart-action, whereas large amounts were distinctly unfavorable. An increase of tolerance to quinine was sometimes noticed, the heart easily supporting the action of a strong dose after the application of a weak one. In general, all the salts caused slowing of the beats. The statement hitherto accepted that any accelerating effect of quinine on the heart is due to an action on the extrinsic nervous cardiac mechanism is thereby confirmed. All the salts diminished the amplitude of the beats when applied in large amount. In small amounts, the hydrochloride was found to increase the amplitude, the hydrobromide first to increase then diminish it, and the other 3 salts to diminish it from the beginning. At a certain level of toxicity the phenomenon of "reversed quinine action" sometimes appeared, especially with the sulphate: A solution at first toxic became innocuous, then stimulated the heart. The results of the experiments argue neither in favor of an exclusive action of the drug on the intracardiac ganglia nor on one exclusively on the heart-muscle; it is difficult to conceive of a paralyzing effect exclusively on the myocardium, since, without change in the rate, a considerable increase in the systolic force was often noticed. The results also support the opinion of Schmiedeberg, Meyer and Gottlieb, Poulsson, and v. Tappeiner that the hydrochloride of quinine should be used in preference to the sulphate in clinical medicine. De Arric (Ann. et Bull. de la Soc. des Sci. méd. et nat. de Bruxelles, vol. lxx, No. 6, 1912).

RHEUMATOID ARTHRITIS, RELATION OF GASTRIC SECRETION TO.

In the 10 cases of rheumatoid arthritis examined by the authors, no demonstrable gastric lesions were discovered; yet, the results obtained appeared to indicate a pathological condition of the stomach. An examination of the gastric secretions in these cases showed: (1) a diminution in the amount of free hydrochloric acid, and also of the total hydrochloric acid; (2) an excess of mineral chlorides, pointing to a process of neutralization, and (3) a comparatively low ratio between the total hydrochloric acid and the mineral chlorides.

The line of treatment adopted in these cases was to remedy the defect in the gastric secretions, and so far the results have been encouraging. The following formula was employed:—

℞ Ac. hydroch. dil., ♏v (0.3 Gm.).
Glyceriti pepsini, ♏xx (1.3 Gm.).
Ol. caryophylli, ♏j (0.06 Gm.).
Tr. quillajæ, ♏xx (1.3 Gm.).
Aq. anisi, q. s. ad f℥ss (15 Gm.).
M. Sig.: To be taken three times daily.

A. S. Woodward and R. L. Mackenzie Wallis (Lancet, October 5, 1912).

SCARLET-FEVER PATIENTS, CARE OF.

Diet.—A milk diet should be given in this disease until the temperature has been normal for twenty-four hours.

Farinaceous foods may then be given. After the twenty-first day gradually increase to a light, then to a general, diet.

Skin.—Excessive itching may be relieved by bathing with a 0.5 per cent. solution of liquor cresolis compositus, or an emulsion of soap with tincture of benzoin and boric acid may be used. The desquamation on the soles of the feet may be hastened by painting them with tincture of iodine, or a 6 per cent. salicylic acid ointment may be bound on overnight.

Hair.—Itching of the scalp may be relieved during the first three weeks by washing with alcohol followed by rubbing in a small amount of white petrolatum. Later the hair and scalp should be washed with tar soap and a lotion or tonic applied.

Eyes.—For the more severe cases of conjunctivitis which are not relieved by cold boric acid compresses, 1 drop of epinephrin chloride solution in each eye, followed by 1 drop of 5 per cent. argyrol, is indicated.

Throat.—Care of the throat consists in cleanliness, which is best secured by irrigations with a 4 per cent. solution of sodium bicarbonate, lime water, or normal saline. Externally, heat, cold, or wet compresses may be used.

Nose.—The secretions should be kept as fluid as possible. For severe congestion and swelling a spray of eucalyptol and menthol, 1 per cent. in liquid petrolatum, may be employed; or, each side of the nose may be painted with epinephrin chloride or adrenalin inhalant, followed by the application of 20 per cent. argyrol.

Ears.—Proper care of the nose and throat prevents middle-ear complications. Cases of otitis media should be seen daily by someone familiar with the ear conditions of scarlet fever.

Lymph-nodes.—In cases of polyadenitis which do not improve with hot or cold applications, dressings of the following may be used:—

℞ Plumbi acetatis,
Aluminis pulveris, of each, ℥iv (60 Gm.).
Alcoholis, ℥xvj (250 c.c.).
Glycerini, ℥viij (120 c.c.).
Aquæ, ℥lxiv (1000 c.c.).
Mix and dispense with "shake label."

Huge, wet dressings of this are to be kept on the enlarged nodes continuously; they are most efficacious at the temperature of melting ice.

Lungs and Pleuræ. — Bronchopneumonia and pleurisy are to be treated as when they occur elsewhere. All pleuritic effusions, no matter how small, should be aspirated early. Should scarlet fever occur in a tuberculous subject, a more liberal diet should be given, and plenty of fresh air.

Heart.—Heart complications are best prevented by keeping the patient in bed until the twenty-fourth day, plenty of fresh air, and a proper amount of sleep. After the temperature has remained normal for twenty-four hours iron may be given. Should endocarditis occur the period of rest is necessarily longer.

Blood.—In septic cases antistreptococcic serum should be administered by someone experienced in its use.

Stomach and Intestines. — Bismuth subcarbonate in 60-grain doses, or 6 drops of a 1 per cent. solution of cocaine in a wineglassful of water every fifteen minutes for four doses, will relieve prolonged nausea and vomiting. For constipation, a tea of senna leaves or rhubarb, aloes, and cascara sagrada is best.

Kidney.—The diet should be selected with the idea of keeping up the weight and strength of the patient with the smallest possible amount of kidney irri-

tation. When nephritis occurs, begin the treatment early, relieving the kidneys by using the accessory channels of elimination, saline diuretics, and a milk diet.

Joints.—Should inflammation of the joints occur, a saline purge should be given, alkalies administered until the urine is alkaline, and the salicylates given for pain. Friction usually helps these joints.

Nerves.—Severe delirium is relieved by a hot pack; this may be supplemented by 5 grains of acetphenetidin and ½ grain of codeine. Mills Sturtevant (Journal of the American Medical Association, August 24, 1912).

SUBCLAVIAN ANEURISM, TREATMENT OF.

Aneurism of the subclavian artery occurs most frequently in the first and third portions. Aneurism of the first part is rarely ever situated so as to permit of any other form of proximal ligation than that of the innominate, and this is an operation of necessity rather than choice.

Ligation of the third part of the subclavian for aneurism may be either proximal, distal, or both. The most satisfactory treatment is ligation of the first part of this artery with its branches, with the possible exception of the vertebral. Such simultaneous ligation of the branches diminishes both the risk of secondary hemorrhage and the possibility of a subsequent relapse of the aneurism. In the event of recurrence a cure may be effected by the distal ligation of the axillary as close to the aneurismal sac as possible; should the aneurism again occur, the sac may be excised after the main arteries supplying it have been ligated.

These various operations are facilitated by the primary resection of the clavicle and even a part of the manubrium, if necessary. In many cases some permanent disturbance of the extremities, either motor, sensory, or trophic, mars the cure of the aneurism, and fatal aneurism of the aorta is very apt to develop subsequently. Ellsworth Eliot, Jr. (Annals of Surgery, July, 1912).

SYPHILIS OF THE STOMACH.

From a consideration of the various phases of about 50 cases of syphilis of the stomach the author has drawn the following conclusions:—

It is a rare manifestation of either congenital or acquired syphilis, and occurs for the most part in males, at almost any age, but especially in the fourth and fifth decades.

Pathologically, it is characterized by a multiplicity of lesions in many organs, and by a variety and plurality of lesions in the stomach itself.

The symptoms correspond to the pathological findings and present no unanimity. There are, however, four symptoms which are fairly common, either occurring singly or combined: Pain, especially immediately after eating; emaciation, tenderness, and hemorrhage.

Syphilis of the stomach may be classified under (1) ulcer in any part of the organ and its result, (2) gumma in any part and its sequelæ as a tumor, (3) widespread infiltrations of gummatous or more fibrous character leading to deformity, cicatrization, or involvement of the peritoneum or neighboring organs, and (4) a combination of two or more of these. Clinically, the cases of gastric syphilis cannot be divided too strictly, as an exact diagnosis of the form of the lesion is often impossible except by operation or autopsy.

The diagnosis is usually extremely

difficult, but should be comparatively simple if there is a clear history of syphilis, or if the Wassermann is positive. A correct diagnosis is extremely important, as death may occur as the result of hemorrhage, inanition, or stenosis when timely intervention could have cured.

In the treatment of gastric syphilis good results are obtained by the use of any form of mercury or the iodides. Jerome Meyers (Albany Medical Annals, October, 1912).

TETANUS, PROPHYLAXIS OF.

It is claimed by the author, on the basis of a lengthy experience, that the occurrence of lockjaw can be entirely eliminated by careful use of the prophylactic procedure he describes.

In all suspicious injuries the wound should be sterilized, especially its deep edges. Large and open wounds are, of course, irrigated. But the vast majority of cases of lockjaw develop from puncture wounds, and it is especially with these that the author is concerned. He makes use of a set of metallic screws, provided with handles and ranging in size from that of a small probe to a diameter of $\frac{5}{16}$ inch, and therefore suitable for wounds of all sizes, such as may be due to nails, pitchfork tines, dog teeth, etc. The threads in these screws should be at an angle of 25° with the axis, and thin. In the absence of these special screws, which can be prepared by any instrument maker, one can often use an ordinary aluminum applicator with threads, or ordinary screws obtained from any hardware store.

After inserting in the wound a few drops of an alcoholic solution of cocaine, the sterilized screw is dipped into an antiseptic solution, *e.g.*, 2 or 3 per cent. lysol, and inserted in the wound. The liquid is held by the spiral gutter. As the screw is being introduced it is kept turning, but held back, so that by the time it has reached the bottom it has been turned enough to have carried it more than twice as far. It is now given a few more turns, foreign substance and germs being thus lifted out. The instrument is next *pulled* out and washed in an antiseptic, then dipped in tincture of iodine (if the puncture is not a large one), forced down to the bottom of the wound, and given a few turns backward. Finally it is dipped into carbolized oil (1 minim of phenol to 14 of pure olive oil), pushed gradually to the bottom of the wound, turning backward, and unscrewed out. The wound is then dressed in the usual antiseptic manner. No germs will live in it.

The screw used should be of such size as will follow the track of the wound easily. If the skin is hard (as in the sole of the foot) and the wound entrance tightly contracted, it may be nicked with the point of a knife.

The procedure not only prevents tetanus, but is equally efficacious against streptococci and staphylococci. Dowling Benjamin (Medical Record, June 29, 1912).

THERMOHYDROPATHIC TREATMENT OF TYPHOID FEVER AND OTHER CONDITIONS.

The cold-water bath in typhoid fever, the author remarks, has gradually lost favor, and in several large hospitals is not employed even in high fever. In addition to the disagreeable subjective effects, chilliness and almost unconquerable dread of the first shock, there have occurred in many cases results not at all favorable to the treatment: congestive and hypostatic effects and even collapse. In this and other affections the author

prefers the use of hot baths. The initial effects of extreme cold and heat are identical, but with the latter the injury to the vitality of tissues which sometimes follows long-continued applications of cold does not occur.

The temperature recommended by the author for the baths is 108° to 115° F., which is that of the hot daily immersions, of twenty to thirty minutes' duration, employed for thousands of years by the Japanese for purposes of health maintenance and cleanliness. At first there is a decided shock to the body somewhat like that caused by getting into cold water; the breath is driven out of the lungs, the heart beats faster, but almost instantly this passes off, a sense of warmth and extreme comfort supervenes, and the whole surface of the body flushes, remaining so for some time. One soon becomes accustomed to these baths, and loses all dread of the first shock—a point of difference from the sudden application of cold. For those who cannot at once get into the hot water, it is well to begin at 105° F., then turn on hot water, and gradually run up to the required temperature. Water at 99° to 102° F. does not have the same good effects as the hotter baths. The duration of the bath should be ten to fifteen minutes; this leaves one comfortable, stimulated, and without visible perspiration.

In "colds," in the beginning of bronchitis, pharyngitis, and myalgias, the author has found the hot baths (105° F. for ten minutes) almost abortive. Neuralgia, neuritis, and "stiff neck" are quickly relieved. In lumbago, sciatica, and tonsillitis the baths are also efficacious. In glandular enlargements in the groin, axilla, and neck, they cause immediate softening. In local infections so situated as not to be easily treated by immersion of the part in hot boric acid solutions the hot tub bath is also valuable. In acute nephritis following infectious diseases the author has had good results.

In premenstrual affections the baths are particularly valuable. Half an hour in the tub with the water at 108° F. will afford great relief from malaise, backache, and other symptoms. In hemorrhagic conditions, however, the hot bath is contraindicated. In the treatment of endometritis, adhesions, vaginitis, neuromata, and hyperesthesia, the author uses a tubular vaginal douche made of aluminum, six inches long, two inches in diameter, perforated along the body and open at the distal end, for vaginal insertion while the patient is in the tub. This tube distends the vaginal walls and allows the hot water to remain in the canal as long as needed. A similar rectal tube is used in proctitis, fissure, and particularly the tenesmus of dysentery.

In typhoid fever, the hot baths reduce the temperature, relieve nervous symptoms as well as meteorism, and cause the patient to *feel* better not only while in the bath, but afterward. The only contraindication is actual hemorrhage. Hot baths are also valuable in uremia, in suppression of urine, and in the convulsions of children, whatever be the exciting cause. E. S. Goodhue (Medical Record, June 8, 1912).

TINEA TONSURANS, TREATMENT OF.

The following combination was found very efficacious by the author in the treatment of widespread tinea tonsurans:—

℞ Camphoræ,
Alcoholis, of each, ℥iv (120 Gm. or c.c.).
Acidi picrici, gr. vij (0.45 Gm.).

M. Sig.: Inflammable. To be painted freely over the scalp twice daily.

In addition, the hair is clipped absolutely close, the scalp washed once or twice a week, and a calico cap worn during the treatment. All the cases in which the preparation was tried did well. Most of them experienced no discomfort from it, though in one or two instances slight tenderness and smarting were felt. The only objection to the treatment is the yellow staining of the hair, which is still noticeable three weeks after the treatment has been discontinued. A. Winkelried Williams (British Journal of Dermatology, June, 1912).

TUBERCULOSIS AND SYPHILIS.

It has recently been the custom of the authors to administer salvarsan to all phthisics showing a recent syphilitic infection or to those not doing well, but having a history of syphilis. There is no question but that there is a much greater amount of syphilis of the lung than heretofore has been supposed, and in these patients it is hard to say just how much of their trouble is specific and how much tuberculous. It is not at all uncommon to find that all one can do in a given case is of no avail until an injection of "606" has been given, when one is gratified to see the pulmonary symptoms grow better and the general condition improve. Appetite is increased, cough and expectoration lessened, and fever reduced in a wonderfully short space of time.

In the patients thus treated the writers have as yet seen no untoward symptoms—with one exception. In this patient the temperature rose about three hours after the injection and he was slightly delirious for a period of four hours. From then on, the recovery was uneventful. The intravenous method is used and the distilled water and the normal salt solution prepared the morning of the day on which the injection is given. This eliminates the possibility of the formation of any foreign proteid in the water or salt solution which in itself might produce annoying symptoms.

The authors feel justified from their experience in recommending the use of salvarsan in cases of the kind mentioned. Of course, as a matter of routine the urine of each patient should be examined and the reflexes tested with a view to excluding kidney disease or lesions of the central nervous system. L. S. Peters and E. S. Bullock (Medical Record, September 14, 1912).

WASSERMANN REACTION IN DIAGNOSIS OF LOCAL DISEASE.

Cases in which a non-specific localized lesion coexists with general syphilitic infection not infrequently come under the observation of the practitioner, and in them diagnosis may be a difficult matter. Such is the case, for example, when a syphilitic presents a lesion resembling cancer of the tongue, to which, indeed, syphilitics are predisposed just as are inveterate smokers. The author calls attention to the fact, frequently overlooked, that in cases of this type one should never base a diagnosis of the local disease upon a positive Wassermann reaction. Prolonged antiluetic treatment in cancer of the tongue mistaken for a local manifestation of syphilis cannot but lead to disastrous consequences. In cases where there is doubt as to the nature of the lesion and the Wassermann is positive, confirmation of the diagnosis by the antiluetic therapeutic test should be sought, but if this treatment should not yield benefit it must be abandoned without delay. F. Bruck (Medizinische Klinik, August 11, 1912).

Clinical Summary

Practical hints from articles and abstracts that have appeared in the Monthly Cyclopedia and Medical Bulletin during the current year.

Abscess, Hepatic. TREATMENT. Incision rather than puncture urged in all suspected hepatic abscesses (amebic dysentery). Where abscessed liver not adherent to peritoneum, remove ninth and tenth costal cartilage, stitch parietal peritoneum to liver, and open abscess only forty-eight hours later. Keep patient in Fowler position after operation, to avoid possible lung complication, in cases developing cough in course of liver abscess. *Smith.*
Page 670

Acne. TREATMENT. Vaccines useful for selected cases: (1) Cases with deep-seated pustules, occupying a large area; microorganisms abundant, staphylococcus greatly predominating. Autogenous staphylococcic vaccine most efficient, but must be administered over some months. (2) Cases with lesions indolent and superficial, chiefly inflamed comedones, with but little pustulation. Stock acne bacillus vaccine here gives good results in many instances. Administer 5 to 10 millions acne bacilli every week or ten days. (3) Cases combining the more and less severe lesions of the first and second groups. Use mixed vaccines of staphylococcus and acne bacillus. Other measures: Remove other etiological factors, such as reflex circulatory disturbance due to nervous strain in adolescence and digestive disorders. Correct constipation and regulate diet and mode of life. Locally, squeeze out comedones and wash often and vigorously with soap and water; if suppuration present, puncture or incise pustules, bathe with hot water, and dress antiseptically; disinfect skin and have garment worn next to affected part frequently changed; X-rays; radium for indurated nodules. *Morris and Dore.* 93

Acne Rosacea. TREATMENT. Where acne indurata associated, incise papules and pustules, scarify distended nasal capillaries, and apply Bier's cup for some time to individual lesions. Have patient apply hot compresses freely to face and at night following ointment: Salicylic acid, 0.6 (gr. x); precipitated sulphur, 4.0 (3j); white petrolatum, 30.0 (℥j). *Aronstam.* 176

Actinomycosis. TREATMENT. Vaccine made from actinomycotic pus used in 8 cases, increasing from 0.1 to 0.75 c.c. per dose. Of 4 cases of actinomycosis of jaw and neck, 3 recovered and 1 was rapidly improving. In 1 of 2 abdominal cases, drainage of a large inguinal abscess followed by vaccine treatment for two months led to recovery. In other cases, results less satisfactory. *Kinnicutt and Mixter.* 533

Adenitis, Tuberculous. TREATMENT. Röntgen rays recommended for routine use in cases that do not readily respond to medical treatment. Give ten daily irradiations, then 2 or 3 times a week. Study of proper dosage in each case necessary. Patients thus treated early can be cured without breaking down of a single gland. Where such breaking down does occur, incise, swab out cavity with equal parts of iodine and phenol, and drain. *Boggs.* 222

Alopecia Areata. TREATMENT. In children keep hair very short; not necessarily in adults. Wash entire scalp weekly with tar soap. Every day rub in following stimulating preparation: Aquæ ammoniæ, gr. lxxv (5 Gm.); olei terebinthinæ rectificati, f℥v (20 Gm.); spiritus camphoræ, f℥v (150 Gm.). Where seborrheic lesions simultaneously present, use following ointment: Balsami Peruviani, gr. xv (1 Gm.); sulphuris præcipitati, gr. xxx (2 Gm.); olei cadini, ♏lxxv (5 Gm.); olei amygdalæ expressi, f℥vj (25 Gm.); olei theobromatis, ℥iiss (10 Gm.). *Sabatié.* 534

Six obstinate cases treated with ultraviolet rays, and all cured after three weeks to thirteen months. Good reaction, with peeling of skin, followed exposures; the hyperemia induced, lasting a week or longer, was used as guide for time of succeeding exposures. *Harris.* 603

Amenorrhea. TREATMENT. Fresh corpus luteum of sow in 20-grain (1.3 Gm.) capsules—3 or more daily—gave good results in functional amenorrhea, both in young girls and adult women. *Burnam.* 666

Anal Fissure. TREATMENT. Where merely a shallow, red, linear tear: (1) At first visit, cocainize fissure and dilate sphincters gently with fingers; lightly curette any unhealthy granulations present. (2) Regulate bowels by correcting diet, nightly injections of olive oil and, if necessary, cascara or compound licorice powder. (3) Anus to be bathed night and morning with warm water, and a sterile gauze dressing smeared with calomel or boric acid ointment—or, if pain very severe, cocaine or morphine (gr. v-x to ℥j)—applied. (4) At 4- or 5- day intervals, cocainize ulcer, stretch sphincters moderately, and apply ichthyol and glycerin, 15 per cent., or balsam of Peru, 20 per cent. in castor oil, upon cotton, to remain for several hours. Tuttle recommends application of pure ichthyol to fissure 2 or 3 times a week. In many cases not amenable to above palliative treatment excision is applicable: Infiltrate under and around fissure with 0.1 per cent. cocaine, seize small fold of skin at its lower angle, and excise ulcer with tissue forceps well up into anal canal. Where but moderate hypertrophy of sphincters, especially in children and the elderly, dilatation is the method

of choice; some cases recur. Where marked sphincteric spasm, incision and division of external sphincter, under local anesthesia in majority of cases, always gives excellent results. *Hill.* Page 345

Some obscure cases of fissure, with dull pain beginning one or two hours after defecation and continuing sometimes whole day, found to originate in inflamed crypts of Morgagni opening high up in anal canal. Their excision necessary for cure (*v.* Hemorrhoids, Treatment). *Tuttle.* 537

Anemia. TREATMENT. To increase amount of iron in red cells, following suggested: Acidi citrici, 15 Gm. (3¾ drams); ferri citratis solubilis, 4 Gm. (1 dram); aquæ, 120 Gm. (30 drams). One teaspoonful with water before meals and at bedtime. *Hemenway.* 417

Anemia, Pernicious. TREATMENT. Case in a pregnant woman at term in which 4 intragluteal injections of defibrinated human blood, amounting altogether to 159 c.c., proved markedly beneficial. *Esch.* 44

Apoplexy. TREATMENT. In thrombotic apoplexy early reduction of viscosity of blood by means of citric acid gave excellent results. *Hemenway.* 417

Appendicitis, Chronic. DIAGNOSIS. Pain chiefly in right lower quadrant, if unassociated with attacks of epigastric pain and nausea, is seldom due to appendix; before diagnosing chronic appendicitis exclude every other possible condition.

TREATMENT. Appendectomy alone frequently does not cure. This is true especially of patients with chronic constipation; a long, dilated cecum, with other evidences of enteroptosis, is usually present. *Stanton.* 33

Arteriosclerosis. TREATMENT. Rest in bed for two or three weeks, with forty minutes of massage daily, most effectual in lowering blood-pressure, though even here results are not permanent. Diet should be a mixed one, easily digestible, with fair amount of residue, and moderate in amount. Hot full baths—106° to 112° F.—for ten minutes reduce pressure temporarily and promote elimination; in obese individuals with fatty hearts a blanket pack for one-half to one hour should follow, then a spray, gradually lowered from 98° to 70°. In thin patients, only neutral full baths,—98° F.,—followed by neutral spray, should be given. Where asthma and bronchitis, Russian steam bath, followed by tepid spray, is valuable. Other good measures: Electric light bath, followed by blanket pack or spray; ultraviolet rays, for paresthesias; static crown breeze at bedtime, for insomnia. *Swan.* 663

Arthritis, Gonorrheal. TREATMENT. Intra-articular injections of iodine tincture, 5 Gm. on the average, used in many cases of various types, with considerable success. Increased swelling at first, then cessation of joint effusion, disappearance of pain, and return of motion. *Hildebrand.* 37

Arthritis, Rheumatoid. TREATMENT. 1. Liberal diet, including plenty of animal food. 2. Guaiacol carbonate in cachets; dose at first from 5 to 10 grains *t. i. d.*, to be increased by 1 to 2 grains each week up to 15 or 20 grains. If given long enough (at least twelve months) this will in many cases arrest disease, diminishing size of joints and permitting of increased movements; it relieves pain markedly. 3. Potassium iodide in 10-grain doses, combined with the guaiacol, increases benefit; its depressing effect to be counteracted by tonics. 4. Thyroid preparations are of value in early cases associated with Raynaud-like symptoms and cramps in extremities. 5. Hot baths, superheated air, or electric light; douche masssage; peat baths or brine baths. 6. Passive movements and massage. 7. Bier's hyperemia, where affected joints few. 8. Fibrolysin followed by massage, where joints more or less fixed owing to fibroid thickenings. 9. Irrigations of colon, where arthritis secondary to chronic colitis. *Luff.* 112

Thyroid preparations useful in many cases of long-standing osteoarthritis and chronic infectious arthritis, probably because of damage to the thyroid gland resulting from its hyperactivity attendant upon continued toxemia. Slow pulse an indication of thyroid failure; emaciation does not preclude it. Dosage of dried thyroid substance ranges from 1½ grains (0.1 Gm.) once daily up to 5 grains (0.3 Gm.) *t. i. d.* in distinct myxedema. Avoid causing headache, diarrhea, or reduction of blood-pressure, and intermit drug from time to time. Thyroid medication necessary for remainder of life where thyroid failure thoroughly established. *Midelton.* 236

Asthma, Bronchial. TREATMENT. Importance of chronic coprostasis and intestinal autointoxication in etiology of asthma shown. Necessity of bowel regulation in the treatment emphasized. *Ebstein.* 33

Calcium chloride internally found to exert a notable prophylactic action. After administration for three or four days of a tablespoonful of 5 per cent. calcium chloride in milk every two hours, paroxysms ceased, often not to return for several months. The drug should be continued for a week. No untoward effects. *Kayser.* 416

Management of asthma in children described: A. *During Intervals.*—1. Feet and legs to be always kept warm and dry, and chest and neck properly protected. 2. Low meat diet, with plenty of vegetable proteid, generally to be ordered. Where intestinal trouble, include green vegetables and fruit juices. 3. Upon first symptom of a cold, have child put to bed, and give liquid diet, an active cathartic, and hot drinks. 4. In obstinate cases: change of climate. 5. Where simple anemia present, or history of rheumatism, give appropriate treatment. 6. Have mother give daily exercises in deep breathing, with stress on complete expiration. 7. Have elastic binder, with shoulder straps, worn

around chest, to exert slight pressure and aid expiration. 8. Where catarrhal bronchitis persists after acute paroxysms, give sodium bromide in doses of 2 to 4 grains (0.13 to 0.25 Gm.) 3 times daily after meals in essence of pepsin, for several weeks. If no nervous element present, give instead syrup of hydriodic acid in doses of 10 to 20 minims (0.6 to 0.12 c.c.).

B. *In Paroxysms.*—1. Room to be warm; ventilate from adjoining room. 2. Where tympanites, give warm enema. 3. If paroxysm soon after hearty meal, give emetic. 4. Specific remedies, each relieving certain cases: Epinephrin, 3 to 5 minims (0.2 to 0.3 c.c.) of 1: 1000 solution hypodermically; morphine sulphate, $\frac{1}{30}$ grain (0.002 Gm.); chloral hydrate in 3-grain (0.2 Gm.) doses; inhalations of nascent oxygen. 5. Where cough and wheezing after paroxysm relieved, give heroine in syrup of hypophosphites; a single dose of antipyrin at bedtime; croup-kettle treatment, using 30 minims each of creosote and oil of eucalyptus to a pint of water, employed with croup tent one-half hour at a time two or three times daily; or similar inhalations of lime water. 6. Give much general care as to diet, elimination, and covering until cough relieved. *McClanahan.* Page 479

Blepharitis. TREATMENT. Marginal blepharitis in children to be treated as follows: 1. Remove crusts 2 or 3 times daily with sodium bicarbonate solution (gr. x to ℥j) or, at first, with warm olive oil. 2. After careful washing rub into roots of lashes a stimulating mercurial ointment (gr. viij of ammoniated mercury or gr. iv of yellow oxide of mercury to ℥j of white petrolatum). 3. If much discharge, especially purulent, cutting of lashes will facilitate cleansing; in worst cases, epilate all lashes involved in pustules. 4. If lid much excoriated, paint 1 per cent. silver nitrate solution on surface daily. 5. Keep lids closed with wet carbolic dressing (1 to 80) for a few days in severe cases, removing it *t. i. d.* to cleanse lids; avoid entrance of solution into eye. 6. Keep child from reinfecting lids with fingers by use of lightly smoked, domed protecting spectacles, or in the very young by cardboard splints bandaged on flexor surface of elbows. 7. Prescribe correcting glasses if required, to remove cause of ocular hyperemia. *Lawson.* 103

Bronchitis, Acute. TREATMENT. In strong children, in second stage of diffuse acute bronchitis or in bronchopneumonia, with many râles and "choked-up" condition, following measures recommended: (1) ½ to 2 teaspoonfuls of castor oil, given within one to one and one-half hours. (2) 30 drops of ipecac and 15 minims of wine of antimony every hour until emesis occurs, not exceeding 3 doses. (3) Tincture of belladonna in 5-minim doses every four hours, gradually increased to 15 or 20 minims, and aromatic spirit of ammonia, 5 or 10 minims. (4) Every other hour, inhalations of the following: Oil of eucalyptus, 4 drams (16 c.c.); beechwood creosote, 4 drams; oil of turpentine, enough to make 4 ounces (120 c.c.). Add from 1 to 2 tablespoonfuls to 1 quart of water, which is kept boiling in room for one-half to one hour. (5) Keep diet low. (6) Combat fever and other symptoms on general principles. (7) For stimulation: Strychnine, quinine, and alcohol. *Lowenburg.* 545

Hexamethylenamine used in 22 cases with good results. Dose, 10 grains (0.6 Gm.) three times daily for three days, then twice daily till cough subsides. Other measures: Rest in bed as long as fever present; exclusion of meats and pastry from diet; good ventilation; calomel and soda, followed by magnesium sulphate. Results: Free secretion promptly established; every case well in from four to five days. *Eisenberg.* 606

Burns. TREATMENT. Dry open-air treatment of extensive burns recommended. After thorough cleansing with soap and water and gasoline (under anesthesia, if necessary), dust burn lightly with zinc stearate powder. Give morphine to relieve pain. Once daily remove all heavy crusts, wipe off exudate with dry sponges, and dust on thin coating of powder. Never allow exudate to accumulate under crust over twenty-four hours. Success of treatment lies in constant absolute exposure of the burn. *Jack.* 346

Tannic acid in 5 per cent. solution, applied with gauze or cotton, recommended for relief of pain in small burns of first to third degrees; also prevents blistering and leads to disappearance of tenderness. *Boehringer.* 665

Callosities. TREATMENT. Apply 40 per cent. formaldehyde solution with brush 3 times daily for several days, or until surface becomes sensitive. Then allow parts to dry, when by soaking epidermis with warm water it can be rubbed off. Repeat process till cure effected. *Hammond.* 539

Carbuncle. TREATMENT. Use of precipitated sulphur, applied as powder into points of suppuration or ulceration or as ointment with cocoa-butter base (1 to 8), advised. Constant application of compress wet with solution of calcium creosote equally efficacious. *Kolipinski.* 463

Carcinoma. TREATMENT. Case of skin carcinoma reported in which local use of 1: 1000 epinephrin solution appeared to cause disappearance of growth. Solution either painted freely over tumor or applied in wet dressing. Tumor gradually replaced at its periphery by healthy tissue. Six years elapsed without recurrence. *Ritchie.* 480

Internal use, in daily doses of 0.4 to 0.6 Gm. (6 to 9 minims), of a 1: 1000 solution of oxidized pyrogallol in 2 per cent. sodium carbonate found useful, causing improvement in general condition and increased appetite. *Von Stein.* 611

Carcinoma, Esophageal. DIAGNOSIS. Progressive retrofixation of tongue found an early

and characteristic sign of cancer of upper third of œsophagus. Protrusion to any marked extent is painful, and traction elicits resistance. *Guarnaccia.* Page 606

Cellulitis. TREATMENT. In cellulitis of hand: Apply Bier bandage and treat pain with hot dressings of saline solution. If pain not relieved, reapply bandage several times; if this still ineffective, make incision or incisions into the part, apply bandage again, continue hot dressings, and have hand placed in bath of hot saline thrice daily. Give iron and arsenic, prepare and inject a vaccine, and administer an antitoxic serum, particularly in early stages. Continue Bier's bandage after cellulitis has subsided and prescribe active movements and electric stimulation of muscles. X-rays often useful to cause deep hyperemia and promote removal of inflammatory products. Massage and passive movements after all inflammation gone. *Corner.* 346

Cholelithiasis. TREATMENT. Sodium salicylate, with or without extract of belladonna, found valuable in drug treatment. Its chief influence is upon inflammatory symptoms. Best results seen in acute and chronic cholecystitis, especially with simultaneous rest in bed and application of hot compresses. In such cases, give 2 to 4 times a day a powder of sodium salicylate, 0.5 Gm. (7½ grains), and extract of belladonna, 0.01 to 0.02 Gm. (⅛ to ¼ grain), dissolved in warm water. In severe cases of biliary colic with constant pain and high fever, calomel, 0.06 Gm. (1 grain) every hour for first 3 to 5 doses, then every two hours until first typical calomel stool appears, not exceeding 8 doses a day, often gives striking results. All patients should drink in bed about an hour before breakfast 1 to 2 tumblers of hot water; also a tumbler before retiring, and smaller quantities frequently during the day. Where chronic jaundice, gastric atony or dilatation, or intestinal catarrh, rectal injections of water, especially Carlsbad sprudel at 40 to 50° C., very useful. Dietetic Treatment: At least 5 small meals a day; food to be taken minced or as purée; very cold foods and drinks to be avoided. After each biliary attack, patient should be kept in bed several days. Physical exercise, including deep-breathing exercises, important in cases free of colic and local tenderness for some time. *Mayer.* 535

Cholera Infantum. TREATMENT. For vomiting: Restriction to hot water, *ad libitum;* mustard poultice (1 part to 5 or 6 of linseed meal) to epigastrium; later, teaspoonful of iced white-wine whey every twenty minutes or half-hour, which may then be taken from bottle if well borne, and even a little fresh cream added. If vomiting obstinate: Washing out stomach, 1/12 grain (0.005 Gm.) of calomel every half-hour, alternated, if necessary, with draught containing ⅛ minim (0.01 c.c.) of creosote and ½ minim (0.03 c.c.) of iodine tincture in 1 dram (4 c.c.) of camphor water. To stimulate renal activity, if but little sickness present: 15 to 20 drops of nitrous ether every few hours in water. Where any sign of exhaustion: Warm mustard bath for five to ten minutes, followed by ingestion of 10 to 30 drops brandy in hot water (to be repeated until warmth of limbs restored); strychnine hypodermically, with 3 or 4 drops of ether; quiet and horizontal posture. For intestinal condition, give following every four hours to six months' child: Bismuthi subcarbonatis, gr. x (0.6 Gm.); sodii salicylatis, gr. j (0.06 Gm.); glycerini, ♏xv (1 c.c.); aquæ, q. s. ad f3j (4 c.c.). For fever, give enemas of water at 80° F.; 5 or 10 ounces of normal saline may be used or 2 ounces given into loose tissue of back. Where case seen early, before exhaustion has set in, disorder may sometimes be arrested with small doses of morphine sulphate hypodermically: 1/30 grain (0.002 Gm.) combined with 5 or 6 drops of ether, for child 1 year old; this may be repeated in an hour. Energetic stimulation should follow, and extremities be kept warm. *Eustace Smith.* 542

Chorea. TREATMENT. Ethyl carbamate (urethane) gave favorable results. *Bertling.* 490

Clavicle, Fracture of. TREATMENT. Dressing of heavy moleskin plaster devised to avoid skin irritation of zinc oxide plaster and prevent looseness of dressing requiring reapplication. Warm a piece of moleskin 4 or 5 inches wide by 18 long, loop it about humerus high up in axilla, join its ends, and insert eyelets in them for lacing. Place a second strip around healthy side of body and adapt its posterior end for lacing with humeral loop, thus drawing shoulder of injured side back. Next place piece of moleskin 7 x 10 inches over healthy shoulder as a cap, and insert eyelets in free ends anteriorly and posterior. Pass a long strip 3 inches wide around forearm of injured side close to elbow, and connect ends in front of and behind body by laces with shoulder cap on healthy side, thus providing for elevation of injured shoulder. By tightening one lacing more than other, elbow may be brought forward or back as desired. Wait till adhesive well secured to skin before tightening laces. *Collins.* 347

Colitis, Mucous. TREATMENT. Apply to abdomen at night towel soaked in magnesium sulphate solution, ½ ounce to 1 pint of water, at 75° F. Irrigate rectum with 2 gallons of same solution at 85° to 90° F. Mucus disappears, and pain and gas formation diminish. Milk diet, with fruit, especially grapes, added, also effective; 1½ quarts of milk to be taken during day and 1 pint of hot milk at bedtime; continue for ten days to two weeks. Crude tar of *Pinus palustris,* mixed with flour and ordered in No. 2 gelatin capsules, gave good results; 2 or 3 capsules one hour after meals. *Joseph.* 42

Calumba-agar, containing solid constituents of 2 c.c. of fl. ext. calumbæ in 1 Gm. of agar, found useful in colitis with mucus in stools (*v.* Constipation). *Einhorn.* Page 231

Conjunctivitis, Gonorrheal. TREATMENT. Fifteen severe cases treated by local application of steam, to kill gonococci. As soon as eyelids can be everted—iced compresses having been applied—conjunctival sac is syringed with potassium permanganate solution, dried with gauze, and treated with steam, neighboring skin being protected with linen or wet gauze. Where chemosis marked, ocular conjunctiva is also steamed, care being taken to avoid cornea. Ten patients with corneas uninvolved rapidly and completely recovered, discharge early ceasing; in the 5 other cases conjunctivitis was cured, together with, in 1 instance, cornea. Steam treatment considered superior to silver nitrate. *Goldzieher.* 419

Constipation. TREATMENT. Hormonal, 20 c.c. injected intravenously or intramuscularly, found effective in constipation with general atony and in postoperative paresis. *Hoxie.* 170

Medicated agars considered useful. Phenolphthalein-agar, containing 0.03 Gm. of phenolphthalein in 1 Gm. of agar, and rhubarb-agar, containing 1 c.c. of fl. ext. rhei in 1 Gm. of agar, recommended. Prepared by dissolving remedy in boiling agar water solution, thoroughly mixing, evaporating to the original dry agar volume, and grinding up into flakes. Dose, 1 teaspoonful twice daily in water after meals. *Einhorn.* 231

Constipation with Diarrhea. Found in gouty patients, after abdominal and rectal operations, in pulmonary tuberculosis, in achylia gastrica, and in hypochlorhydria with gastrointestinal atony.

TREATMENT. A few (3 to 5) 2- to 5- grain doses of calomel, followed by magnesium sulphate, or sodium sulphate, or a laxative water; in other cases, castor oil in ½- to 1-dram doses 2 or 3 times daily, continued for a month. Ichthyol valuable in cases with much fermentation. Physical treatment with oil or oil-emulsion enemas, hot baths with massage, or hot wet packs changed every 15 to 30 minutes. Rest in bed. Gastric lavage. Well-prepared food. Strong, black coffee with plenty of sugar often useful; also good beer or cream; bread spread with butter and honey; stewed or dried fruit (latter soaked in water); cheese; agar-agar, etc. Modest exercise alternating with rest; salt baths, sitz baths; sensible wearing apparel; correctly fitted corset. *Bernheim.* 69

Convulsions, Infantile. TREATMENT. Ethyl carbamate (urethane) found effective in infantile convulsions due to gastrointestinal or brain disturbances, as well as in nervous excitement and pain due to injuries or disease. Dosage: 0.5 to 1 Gm. (7½ to 15 grains) in infants less than 1 year old; 2 Gm. (30 grains) in those 1 to 2 years old. May be easily given either by mouth or rectum. No untoward effects ever noted. *Berting.* 490

Corneal Opacity. TREATMENT. "Pressure inunction" of 30 grains (2 Gm.) of calomel in 1 ounce (32 Gm.) of petrolatum advised. After free application of ointment to closed eyelids and in conjunctival sac, pad of absorbent cotton is placed over it and 3 or 4 turns of elastic flannel bandage then applied rather tightly. This is employed for two to three hours daily. Treatment to be persisted in for some months. Ointment may be strengthened or weakened according to tolerance. *Ryerson.* 484

Corneal Staphyloma. TREATMENT. Epinephrin used in 6 cases of acute staphyloma, instead of puncture and bandage, with excellent results. Used as instillations of 1: 1000 solution three times daily. Useful even where cornea perforated. *Pontius.* 666

Corneal Ulceration. TREATMENT. Large doses of pneumococcus serum brought about prompt cure in 70 per cent. of cases of pneumococcic corneal ulceration. *Gebb.* 426

Coryza, Acute. Aromatic spirit of ammonia and sweet spirit of niter recommended as best agents to "abort" a cold. *Beverley Robinson.* 47

Mixed stock vaccine composed of various strains of pneumococcus, 40,000,000; streptococcus, 30,000,000, and staphylococcus, 150,000,000, recommended in colds. Marked improvement usually apparent twelve to twenty-four hours after first inoculation. Repeat dose on second day, then, in prolonged cases, at three- to six- day intervals. Severe complications following colds prevented by vaccine treatment. In cases where catarrhal condition persists between acute attacks, *M. catarrhalis*, 100,000,000, should be substituted for staphylococcus in the vaccine. In some cases, dose has to be doubled. Inoculations made at four- to seven- day intervals for several months. *Sherman.* 291

Hexamethylenamine used in 12 cases with good results. Give calomel and soda in broken doses, followed by magnesium sulphate. Dose of hexamethylenamine, 10 grains (0.06 Gm.) in a half-glass of water three times on first day and twice on succeeding days. If given within twenty-four hours after onset, results are: Scantiness and early disappearance of discharge; "stuffiness" and headache relieved; complications such as laryngitis, bronchitis, and sinusitis avoided. *Eisenberg.* 606

Painting nasal mucous membrane with a 1: 20,000 to 1:1000 solution of oxidized pyrogallol found to yield marked benefit, causing prompt contraction of turbinates. Good results also obtained in hypertrophic rhinitis, sinus suppurations, ozena, pharyngitis, laryngitis, otitis media, lupus, etc. *Von Stein.* 611

Diabetes Mellitus. TREATMENT. Sodium perborate, applied as a powder, usually twice daily, brought about rapid healing in 3 cases of diabetic gangrenous ulcers. *Herzfeld.* Page 167

Artificial milk, prepared as follows, advised in diabetes: 1 broken raw egg; 2 teaspoonfuls of malt extract; 4 teaspoonfuls of olive oil. Beat up in bowl for five minutes; add gradually while stirring 1 pint of drinking water; season with salt; in hot weather add crushed ice. Where patient constipated, has hemorrhoids, is obese, or has hepatic congestion, following purgative combination is valuable: Sodium phosphate and sulphate, of each, ℥iv; dissolve with shaking in quart of cold water. Dose, 1 wineglassful in a tumbler of cold water fifteen or twenty minutes before breakfast or supper. Somewhat milder, more pleasant, and gently antacid is the following: Sodium chloride, ʒiij; sodium bicarbonate, ʒiv; sodium sulphate, ℥iiiss; sodium phosphate, ℥iv. *Kolipinski.* 463

Rice found useful as carbohydrate element in antidiabetic diet in 19 cases. It is easily digestible and absorbable, and is peculiarly adapted to supply carbohydrates without any protein or mineral admixture of consequence, therefore facilitating calculation of albumin requirement and reduction of salts in diet. It may be incorporated with any suitable protein-fat combination, given for protracted periods, and prepared in different ways, avoiding monotony. Sixty Gm. of rice equal 250 Gm. of oats in antiacetonemic effect. Pronounced acidosis is often relieved by 100 Gm. of rice; glycosuria frequently shows simultaneous decline. *Stern.* 604

Diarrhea. TREATMENT. Special reference to diarrhea due to gastric anacidity, either functional, in achylia gastrica, in pernicious anemia, diabetes, or gastric carcinoma. Give diluted hydrochloric acid, 30 drops in glass of water one-half hour after meals, and repeat in half an hour. To stimulate gastric glands give strong meat broths as first course of meals, preceded by full doses, up to 30 or 35 drops, of tincture of nux vomica. Foods to be well salted. Butter; milk, 3 pints, if possible, daily; if not well borne, lactic-acid-bacillus tablets. If there is associated visceroptosis or gastric motor insufficiency, have patient stay recumbent an hour after each meal. *Vander Hoof.* 605

Diarrhea, Infantile. TREATMENT. Soy flour useful in summer diarrhea and some forms of intestinal indigestion; given in form of dilute gruel with or without addition of barley flour and later condensed milk or cows' milk. One to 2 level tablespoonfuls of soy flour to the quart suffice at first; later increased to 4 spoonfuls. Soy-bean, barley, and condensed-milk mixtures useful where, cows' milk disagreeing, there is difficulty in finding food sufficiently nutritious for child. Orange juice advisable from time to time to prevent tendency to scurvy. *Ruhräh.* 52

Following combination recommended in the more severe forms of infantile diarrhea: Magnesii sulphatis, ʒj-ij (4.0-8.0 Gm.); mucilaginis acaciæ, f℥ss (15 c.c.); phenylis salicylatis, gr. v-x (0.3-0.6 Gm.); glycerini, fʒiij (12 c.c.); aquæ chloroformi, q. s. ad fʒiij (90 c.c.). Give 1 teaspoonful every one, two or three hours, sleeping or waking, vomiting or not. Add glycerin when urine concentrated, or give a little sweet spirit of niter separately. Where the salol causes nausea and vomiting, omit it. Take character of stools as guide to frequency of administration: If blood in them does not diminish increase number of doses. Feed child with barley water and white of egg beaten up with an equal amount of water, or better, soda water. In serious cases peptonoids may be added though they sometimes disagree. Place pinch of pepsin scales on tongue after food. *Ellis.* 349

In summer diarrhea: 1. Enforce rest, preferably in open air. 2. For stimulation: Tincture of strophanthus, with or without brandy. 3. For sedation: Morphine and atropine. 4. For subnormal temperature: Hot baths (105° to 110° F.) lasting three to five minutes, repeated every half to one hour, as required. 5. For cold extremities: Local hot mustard bath for a few minutes, followed by application of hot bottles. 6. For hyperpyrexia: Wet sheet every half to one hour with water at 85° F. 7. In extreme cases: Rectal injection of hot coffee, brandy, or camphor, not repeated more than once; hot saline solution very slowly per rectum, after excessive peristalsis controlled. *Kerr.* 548

Diphtheria. TREATMENT. Case in which, after a cure with antitoxin, throat cultures showed abundant diphtheria bacilli three weeks after start of disease. Repeated applications to the throat of a dilute culture of *Staphylococcus pyogenes aureus*, made by inoculating 8 c.c. of bouillon with a loopful of a fresh agar growth of the coccus, led to disappearance of diphtheria organisms from throat, thus preventing the child from being a "diphtheria carrier." General condition markedly improved. No untoward effects. *Page.* 166

Dysentery, Amebic. TREATMENT. Hypodermic injections of emetine hydrobromide gave excellent results. Dose, ⅙ to ⅓ and even ½ grain (0.01 to 0.03 Gm.). No vomiting produced where ipecacuanha by mouth had done so. No ill effects. Drug can thus be given even where administration of ipecac by mouth impracticable. *Rogers.* 539

Eclampsia, Puerperal. TREATMENT. Citric acid found of great value in cases of threatened eclampsia, with marked edema and albuminuria. Following combination advised: Acidi citrici, 30 Gm. (7½ drams); liquoris sodii phosphatis comp., 80 Gm. (2½ ounces); water, 40 Gm. (10 drams); 1 dram in a full glass of water every three hours; later, twenty minutes before each meal and at bedtime. *Hemenway.* 417

Eczema. TREATMENT. Alcohol useful as antiparasitic and to relieve itching. Apply 90 per cent. alcohol twice daily to and around lesions before carrying out other local measures. Good results even in rebellious cases. Applicable in all forms of eczema except those with abundant watery discharge. Continue long after affection overcome, to prevent recurrence. *Monatsh. f. pr. Dermat.* Page 96

Local treatment with heated air employed in 35 cases of eczema in infants, with good results. Applications made once daily for five to ten minutes; affected region then covered with olive oil. Strict dietetic measures also to be enforced. *Perlmann.* 167

Venesection followed by injection of salt solution gave good results in certain cases of chronic eczema with itching in which other treatment, including X-rays, had failed. (V. Pruritus, Treatment.) *Simon.* 365

Eczema rubrum of lower extremities to be treated thus: Restrict intake of meats and sweets, interdict alcohol, cause bowels to move daily, and advise fresh air and at least eight hours' sleep. Locally, remove surgically any varices present, if situated above eczematous area. Then use rubber bandage. First apply ordinary lint around leg, with woolly side covered thickly with a salve and placed over diseased area. Then put on thin rubber bandage, about 3 inches wide and 5 yards long, from toes to knee, overlapping one-third of width, without reversing and leaving heel free. Maintain an even degree of pressure. At night remove bandage and dressing. Wash former in dilute phenol (3j-Oj) and draw through dry towel. Wash leg with weak phenol, dry with absorbent cotton, and apply an astringent cooling lotion twice at fifteen-minute intervals. Dress leg and reapply rubber bandage in morning. *Bechet.* 418

Epididymitis, Gonorrheal. TREATMENT. Where preliminary pain at external abdominal ring (vasitis), put patient to bed and support scrotum by strip of adhesive stretched over anterior surfaces of thighs. For established epididymitis, support scrotum in same way, and apply to it following ointment: Mentholis, gr. xv (1 Gm.); ung. belladonnæ, gr. xx (1.3 Gm.); ung. Credé, gr. xxx (1.3 Gm.); ichthyolis, 3j (4 Gm.); petrolati, q. s. ad ℥j (32 Gm.). If swelling of epididymis does not quickly resolve, strap testicle, as follows: Envelop affected half of scrotum in a square of gauze. Press testicle into bottom of scrotum with thumb and index finger and bind a strip of adhesive above organ, holding it down. Then pass other strips, starting at the first one, around under testicle and up the opposite side until organ is covered. Finally, secure with another transverse strip over the first. Support with suspensory. Renew strapping every other day. *Bethune.* 228

Epilepsy. TREATMENT. (1) Secure bowel movements once or twice daily. (2) Have patient drink water freely. (3) Tepid sponge bathing or brief immersion baths followed by gentle rubbing. (4) Mild exercise in open air. (5) Mixed diet, consisting of vegetables and milk in liberal amount, and also white meats; starchy foods in limited quantity; normal amount of fats. Correct digestive difficulties. (6) Bromides to be used early in disease and in sufficient amount to control seizures. (7) Sodium chloride withdrawal found an aid to bromides, though prohibition of salt should not be so radical as to cause anorexia and loss of weight. (8) Combination of sodium glycerophosphate with bromides proves beneficial. (9) Thyroid extract valuable in epileptic children with arrest of development, as well as, occasionally, in other cases; to be given persistently, in small doses; after a time, it will be found bromides can be reduced or even for a while suspended. (10) Trial of pituitrin in epilepsy justifiable. (11) Symptoms preliminary to seizures, such as headache, depression, etc., indicate the prophylactic use of a saline purge, diminution of food, and increased bromide dosage. *Dercum.* 292

Operation justifiable: (*a*) In traumatic epilepsy with external evidence of injury; (*b*) *do.*, without evidence of injury when nature of attacks or symptoms immediately following injury indicates seat of lesion; (*c*) in Jacksonian epilepsy; (*d*) in general epilepsy where suggestion of a focal lesion may be found before or after attacks in some disturbance of motion, sensation, or reflexes. Gratifying results may be anticipated after operation in 10 to 25 per cent. of cases. *Frazier.* 293

Epistaxis. TREATMENT. Sodium perborate used with success to arrest hemorrhage in epistaxis and after adenoid operations or tonsillotomies. *Herzfeld.* 167

Erysipelas. TREATMENT. Solution of 20 drops of phenol in 25 Gm. (6 drams) of pure neutral glycerin recommended. It is painted over affected area and surrounding skin, but must not come in contact with mucous membranes. *Lodi.* 98

Solution of aluminum acetate recommended for local use in facial erysipelas (*v.* Furuncle). *Stansbury.* 227

Paint involved area in mild cases every hour with preparation of 15 minims (1 c.c.) of phenol and 1 ounce (30 c.c.) of turpentine oil. Treat severe, widespread cases with dressings soaked in mercury bichloride, or better, absolute alcohol, applied twice daily or oftener. Internally give 4 drams (15 c.c.) of camphor water three times daily, and by enema 15 grains (1 Gm.) of collargol twice daily. *Van Velzen.* 348

Esophageal Carcinoma. TREATMENT. Small amounts of hydrogen peroxide solution of 1 to 2 per cent. strength, sipped at intervals of an hour, facilitate descent of food, even in late cases where rectal feeding has been resorted to. *Liebermeister.* 98

Furuncle. TREATMENT. Seen early, a superficial furuncle may be aborted by inserting pointed matchstick, dipped in phenol, deeply into its center; if lesion deep, inject several drops of liquefied phenol at base of lesion. For a furuncle seen late in first stage: Scratch off central vesicle and apply a Bier cup. Dress with sterile gauze wrung from normal saline solution with 1 per cent. sodium citrate, after inserting a bit of rubber dam in opening if there be tension. Protect surrounding skin from citrate with ointment, and over citrate gauze apply waxed paper or oiled silk, covered by compress and bandage. Cupping and dressing may be repeated every four hours until slough loose, when latter is removed with small forceps. Apply citrate only three days. Also give citrate internally, 15 grains (1 Gm.) *t. i. d.* after meals. Where bluish, flabby granulations: Strap edges of wound with adhesive strips, dry granulations, mop with iodine tr., and dust with Bier's powdered silver nitrate. Snip off exuberant granulations. To promote epithelial regeneration, use 8 per cent. scarlet red ointment or amidoazotoluol. Prevent autoinoculation by shaving skin around furuncle and disinfecting with 70 per cent. alcohol, tincture of iodine with benzine, diluted liquor formaldehydi, or aluminum acetate solution. Repeat local disinfection with benzine at each dressing. Where furuncle first seen in stage of softening, incise and drain; latter may be assisted with a Bier cup. For very large lesions or in furuncles of face, inject 3 per cent. novocaine under base, wait five minutes, and remove core from tumor with small curette. Where supposed boils become carbuncles, excise the whole area, controlling bleeding with cautery and compresses, and apply pure liquefied phenol. For recurring furunculosis: Bacterin therapy with killed staphylococci; initial dose, 100 million bacteria, increased by weekly doses up to 1 billion. Yeast also useful. *Skillern.* Page 99

Venesection followed by injection of salt solution gave much benefit in furunculosis. (V. Pruritus, Treatment.) *Simon.* 365

Gastric Dilatation. DIAGNOSIS. Vomiting, abdominal pain, distention, constipation (occasionally diarrhea), collapse, splashing sounds, and peristaltic movement over stomach, appearing suddenly in the course of pneumonia, should at once suggest acute gastric dilatation.

TREATMENT. 1. Introduce stomach tube and practise lavage as often as distention occurs, even in cases with collapse. 2. Turn patient on right side or face. 3. Interdict food and drink by mouth. 4. Strychnine and eserine hypodermically apparently useful in some cases. *Fussell.* 107

Gastric Neuroses. TREATMENT. Condition nearly always associated with gastric atony and vertical "fish-hook" stomach. 1. Relief from pain (due to hyperacidity) obtained by recumbent position on right side or knee-chest posture for several minutes at short intervals after meals. 2. Peristalsis assisted by massage or having patient clasp left knee and make strong intermittent pressure of thigh against abdomen while lying halfway between prone and lateral position. 3. Helpful suggestion. 4. Abundant nourishment in small quantities at short intervals. 5. Attention to any existing anemia. Rational non-surgical treatment effective in majority of cases. *Greene.* 174

Fresh pineapple juice found useful to relieve anorexia. *Floersheim.* 233

Gastric Ulcer. DIAGNOSIS. Rice, milk, potatoes, and prunes cause positive reaction in benzidine test for occult blood in stomach contents, and hence must be excluded from diet before test is made. *Floersheim.* 105

Watermelon pulp found to cause positive reaction in guaiac-turpentine test for occult blood in feces. *Newbold.* 106

Gastritis. TREATMENT. In gastric catarrh with much mucus, citric acid often gives quick relief. Withhold carbohydrates from dietary where amylaceous dyspepsia coexists. In acute gastritis give sodium or potassium citrate and larger amounts of water. *Hemenway.* 417

Gonorrhea, Acute. TREATMENT. Method causing arrest of suppuration in three to five days described. Inject 5 to 15 c.c. (¼ to 4 drams) of 0.25 per cent. protargol solution into urethra every half-hour in daytime and every hour at night. To be retained two to ten minutes, during which time urethra is gently massaged from behind forward. Increase strength of solution gradually. Patient should ingest large amount of fluid, in order to be able to urinate before each injection. Continue injections, given as often as possible, two or three weeks after cessation of pus. Then alternate protargol with lead acetate and zinc sulphate, of each, 0.3 Gm. (2 grains) in 200 Gm. (4⅔ ounces) of water. *Kuhn.* 37

Necessity of early treatment emphasized. Inject slowly into urethra 1½ drams (6 c.c.) of 1: 6 solution of argyrol, and have it retained for five minutes. Patient should then stay as long as possible without urinating. Physician is to give 2 injections daily, morning and evening, while in interval patient makes 2 injections of a 1: 25 solution. Patients thus early treated cured in from two to five days. Continue strong injections until urethra dry and redness gone. Patient may then keep on injecting weak solution. *Minet.* 419

For young girls in whom speculum can be used semiweekly treatment, once with 25 per cent. silver nitrate applied to cervix and 10 per cent. to the vagina, followed by application of petrolatum, and once by 25 per cent. paste of iodoform in glycerin, gives best results. For little girls and virgins, local cleanliness and gonococcus vaccine best. In all cases with joint complications, vaccine of great value. *Morrow and Bridgman.* 540

Gonorrheal Cervicitis and Endometritis. TREATMENT. I. Acute cases: 1. Confinement to bed. 2. Keep emunctories active. 3 Limit diet. 4. Cleanse vagina frequently with large amounts of hot saline solution or hot water containing boric acid or a weak iodine solution. Use irrigator with nozzle projecting a straight forcible stream, and pinch mucous membrane of introitus around nozzle, to flush cavity satisfactorily. Intrauterine measures and pelvic operation intervention contraindicated. II. Subacute cases: 1. Soften and dilate cervix with Goelet's uterine electrodes and galvanic current. 2. Flush uterine cavity with hot iodine solution, 1 dram (4 c.c.) of the tincture to a quart of water, or silver nitrate, 1: 5000. 3. As condition improves, substitute daily intrauterine injections of iodized phenol (equal parts of iodine tincture and phenol) or 1 per cent. silver nitrate. Use syringe with long pliable nozzle, with its tip wrapped with cotton; inject fluid into cotton and withdraw syringe. Insert iodine-glycerin tampon (1 dram to 4 ounces), which patient is to remove next morning. Remove cotton within uterus at next visit. III. Chronic cases: 1. Puncture, evacuate, and sterilize diseased Nabothian glands. 2. Touch opened glands and erosions about os with pure iodine tincture. 3. Intrauterine irrigations and injections as above, three times weekly. 4. Curettage of uterus, thoroughly scraping internal os and cervical canal, followed by swabbing with iodine tincture and appropriate after-treatment. *Dannreuther.* Page 100

Gonorrheal Rheumatism. PROPHYLAXIS. Give 5 to 10 grains (0.3 to 0.6 Gm.) of phenyl salicylate after meals and at bedtime, to fresh cases of urethritis.

TREATMENT. Where tenosynovitis only: 1. Rest of part. 2. Local bloodletting for severe pain. 3. Application of following paste over inflamed tendons: Methylis salicylatis, ʒiiss (10 Gm.); zinci oxidi, gr. xlv (3 Gm.); adipis lanæ, ℥iss (50 Gm.). 4. Subcutaneous administration of: Phenylis salicylatis, gr. xv (1 Gm.); chloroformi, ♏ xv (1 Gm.); olei amygdalæ expressi, f3ij (8 Gm.); 10 c.c. injected four times daily. 5. Massage, after acute symptoms subsided. Where acute arthritis, with effusion, incise, flush out freely, close without drainage, and splint limb; begin massage and motion early; where no effusion, treat as tenosynovitis. Vaccine useful in these cases, especially when protracted. In chronic gonorrheal arthritis, find primary focus of affection and apply appropriate treatment; also vaccine. *Cumston.* 668

Gout. TREATMENT. Radium emanations used in 400 cases of gout and chronic arthritis. Patient in closed radium room for 24 to 36 sittings of two hours each. Injections of soluble radium salts near involved joints given in addition; also superheated air, electric light, and brine baths. Absolute rest in bed an adjuvant. Out of 50 cases in which blood was examined before and after treatment, uric acid disappeared in 37 instances, synchronously with marked amelioration. Cases in children particularly benefited, but cases of senile tuberculous and syphilitic arthritis and cases of very long standing, with marked joint changes, not suited for radium treatment. Low purin diet should also be tried for a few weeks or months; if ineffective, replace it by simple mixed diet, with as much of green vegetables and fruit as possible. *Gudzent.* 95

Combination of sodium citrate with salicylate recommended for gouty conditions (*v.* Rheumatism, Chronic). *Hemenway.* 417

Hay Fever. TREATMENT. Calcium creosote solution diluted with 8 to 10 parts of water recommended; throat and nasal fossæ to be sprayed every hour or two for two or three days. Potassium iodide, 5 grains *t. i. d.*, effective in hay asthma; arsenic may be added with advantage. *Kolipinski.* 77

Hemophilia. TREATMENT. Bleeding from wound in a hemophilic boy, previously uninfluenced by any remedial agent, checked by allowing blood from finger of a normal individual to drop on the wound. A clot formed immediately. *Sayer.* 168

Hemorrhoids. TREATMENT. Use of following preparations recommended: (*a*) Pulveris gallæ, zinci oxidi, ana ʒj (4); hydrargyri chloridi mitis, ʒss (2); bismuthi subnitratis, ʒj (4); cocainæ hydrochloridi, gr. v (0.3); unguenti aquæ rosæ, ʒj (30). (*b*) Pulveris gallæ, zinci oxidi, ana gr. v (0.3); morphinæ sulphatis, gr. ¼ (0.015); cocainæ hydrochloridi, gr. j (0.06); atropinæ sulphatis, gr. 1/60 (0.001); olei theobromatis, gr. xxv (1.6); ft. suppos. In external piles ointment is smeared within and around anus, and protected with cotton partially inserted therein; used three times daily. In internal piles, suppositories used, once or twice daily. Anus to be kept clean and constipation avoided. Inject 4 to 6 ounces of cold water in rectum several times daily. *Robinson.* 481

Inflammation of crypts of Morgagni or anal valves due to swelling of veins in rectal columns and lodging of fecal matter in crypts, is probably cause of "itching piles." Where small fissure exists between 2 piles it is nearly always connected with crypts, which must be laid open before complete cure possible. Only permanently successful procedure for cryptitis is to pass flexible bent probe with smooth, round head into depths of crypt and excise latter around it, through a Humphries speculum. Stretching of sphincter to be done only after crypts excised. Lay small strip of iodoform gauze into each tract left by excision and hold it in place by Lynch tube for forty-eight hours. Leave gauze until granulation well established, then induce its removal by gentle laxative. Dress parts with ointment of ichthyol, 5 per cent.; argyrol, 15 per cent., and anesthesin, 10 per cent. *Tuttle.* 537

Hepatic Affections. TREATMENT. Combination of sodium salicylate and sodium benzoate found useful for cholagogue and "flushing-out" effects in various disorders, especially suppurative angiocholitis, cholecystitis, and lithiasis. Sodium salicylate induces flow of concentrated bile; sodium benzoate, of dilute bile. Relative amounts of two salts to be varied according to indications. Formula suggested: Sodium benzoate, 0.75 Gm. (12 grains); sodium salicylate, 0.5 Gm. (8 grains); sodium borate, 0.25 Gm. (4 grains); rhubarb, 0.3 Gm. (5 grains); to be taken *t. i. d. Polain-Cartier.* Page 38

Hepatic Congestion. TREATMENT. Where due to heart disease: Venesection or cupping; drastic or saline cathartics. Patient to take only boiled water for six to twenty-four hours, then milk diluted with water, and finally milk alone, 1½ gradually increased to 2½ liters daily. Start digitalis simultaneously; continue its diuretic action with theobromine, 3 cachets of 0.5 Gm. (7½ grains) each daily. To improve hepatic function: Copious intestinal irrigations with cold boiled water, alkalies, saline purgatives, cholagogues in small doses, and tub baths, followed by general massage. Where liver sclerosed owing to cardiac trouble, alcohol and dietetic excesses to be forbidden. Ferments and intestinal antiseptics may be of great service. When cardiac weakness appears, digitalis may be replaced in these cases by following pill, to be taken 3 times daily: Extracti ergotæ, pulveris scillæ, of each, gr. iss (0.1 Gm.); hydrarg. chlor. mit., gr. ¾ (0.05 Gm.); pulveris digitalis, gr. ⅜ (0.025 Gm.). In simple hepatic hyperemia in an adult: Venesection, purgatives, hot iron. In true hepatic cirrhosis: Iodine and calomel, latter in doses of 1/6 to 1/3 grain (0.01 to 0.02 Gm.) every morning, together with hepatic substance. *Vires.* 540

Hernia, Inguinal. TREATMENT. In infants use truss; to be kept applied continuously. After two years, if hernia still persists, urge radical cure, if possible. *Campbell.* 169

Latent hernial sac frequently to be found on side opposite that operated. Should be searched for in all children and young adults, and, if present, ligated, thus insuring patient against possibility of a second operation. *Roughton.* 541

Hodgkin's Disease. TREATMENT. Röntgen rays cause prompt reduction of glands. Whenever recurrence is manifest, renew the treatment. External tumors can thus be controlled a long time, or until patients succumb to deep involvement. *Boggs.* 229

Hyperchlorhydria. TREATMENT. Rhubarb and soda, or rhubarb and magnesia, either in mistura rhei et sodæ or in Gregory's powder, useful in gastric disorders with fermentation or hyperacidity. *Beverley Robinson.* 47

Salt-poor diet, chiefly of albumins and fats, recommended. Cream to be taken, but not milk. Meat to be used only after softened by hanging and well pounded. Whenever heartburn appears, 1 or 2 raw eggs to be swallowed; soft-boiled eggs not so well borne. Light, salt-poor cheese especially recommendable. Foods made from flour to be restricted and taken only with eggs and much unsalted butter and rich cream. Vegetables to be scalded two or three times with water and latter then thoroughly poured off. Combat hyperacidity due to vagus excitation with pills of belladonna and valerian. For the overexcited mucosa give some astringent in tepid water half an hour before meals. To the very nervous administer also 45 to 60 grains (3 to 4 Gm.) of a bromide, for four to six weeks. Four or five meals to be taken daily, unless gastric atony or emaciation necessitate shorter intervals. *Ehrmann.* 481

Hyperidrosis. TREATMENT. For sweating feet: Bathe them every night with 1 per cent. potassium permanganate solution and dry thoroughly. Next morning dust on following powder: Potass. permang., ʒij (8.0); alumin. pulv., gr. xx (1.25); talc. pulv., ʒj (32.0); zinci carbonat. et oxid., of each, ʒss (16.0); or else, have patient wear white stockings previously soaked in saturated boric acid solution. Where bromidrosis, use dilute formalin. For sweating in axillæ: Bathe with weak vinegar, and apply following powder on gauze pad: Acid. salicyl., gr. xx (1.25); amyli pulv., ʒij (8.0); alumin. pulv., q. s. ad ʒiss (48.0); or else, use following lotion: Betanaphtholis, ʒj (4.0); glycerini, ʒij (8.0); alcoholis, q. s. ad ʒiiss (80.0). Where persistent bromidrosis, short exposures to X-rays may be effective. *Meachen.* 177

Hyperthyroidism. DIAGNOSIS. Elevation of temperature found an early symptom in many cases, especially mild ones. When, in absence of acute or other tangible disease, there have been loss of weight and augmented nitrogen and phosphoric acid excretion, and when, after administration of a thyroid or iodine preparation, there occur the characteristic psychoneurotic and cardiac symptoms of excessive thyroid activity, elevation of temperature is a thyrotoxic phenomenon. *Stern.* 39

Hypothyroidism. DIAGNOSIS. Blood showing mild leucocytosis and relative lymphocytosis with eosinophilia from 3 per cent. up is highly suggestive of thyroid insufficiency. *Collins and Kaplan.* 40

Ileus. TREATMENT. Enterostomy performed in 20 cases in terminal stages of ileus, with result that only 16.6 per cent. died from the condition. Should preferably be done before intestinal paralysis is complete and abdominal muscles stretched beyond limit of tonicity. Lower ileum is seat of election for opening in gut; colon should not be used. Tube not less than 5/16 in. inside diameter should be used for drainage. *Taylor.* 397

Inertia, Uterine. TREATMENT. In secondary inertia and where pains ineffective owing to hydramnios or twin pregnancy, intramuscular injection of pituitary extract is indicated. May also be employed in febrile states. Where complications expected after birth, inject pituitary extract a few minutes before end of second stage. Where used in first stage, time to inject is when os is a little less than size of palm in primiparæ, and when it will just admit 2 fingers in multiparæ. *Jaeger.* Page 234

Influenza. TREATMENT. Following measures used with benefit in 8 cases: Diet; mild purge; acetphenetidin in moderate doses for pain; hexamethylenamine, 10 grains (0.6 Gm.) three times daily in water until temperature below 100° F. and symptoms much improved; then in half doses till temperature normal, and finally in one-third doses for a week. All patients well in five to seven days, without complications. *Eisenberg.* 606

Insanity. TREATMENT. Thyroid substance in large doses tried in 41 insane patients, all put to bed before treatment started and carefully watched. Dose, 60 grains (4 Gm.) daily in 3 doses, for two weeks. Of those treated, 34 per cent. recovered and 12.1 per cent. were improved. Of the recoveries, 7 were suffering from stupor, 6 from chronic melancholia, and 1 from mania. Signs of improvement not to be expected until four to six weeks after treatment. *Eager.* 672

Intertrigo. TREATMENT. In infants acute enterocolitis, frequently the cause of intertrigo through the irritating discharges, should be overcome by dieting: stop milk; give rice, arrowroot, or albumin water, with plenty of pure water to allay thirst. Internally, give sodium phosphate, 5 to 10 grains (0.3 to 0.6 Gm.) every morning for two or three days, usually followed by castor oil, 1 dram (4.0 c.c.). Locally, soak parts with oatmeal water. Give an oatmeal bath, by soaking bag filled with oatmeal in tub filled with boiling water for one-half hour, then allowing to cool to 100° F. and giving child hip bath. Then use following salve: Calamin and zinc oxide, of each, 3 parts; petrolatum, 50 parts. Dust parts with cornstarch or wheat flour. Use salve three times daily, previously cleansing parts with olive oil, if necessary. *Fischer.* 170

Intestinal Indigestion. TREATMENT. Pure cultures of *B. bulgaricus* used with benefit in cases of indigestion of putrefactive type with odorous stools and indicanuria. Dosage, for adults, 3 to 4 teaspoonfuls of liquid culture 2 or 3 times daily, preferably in sweetened water before meals. Antiseptics internally to be avoided during treatment. Diet: Meat and eggs in limited amount only, or at first prohibited entirely; give buttermilk and milk containing no preservative; fruits and sweets freely; fats, cream, butter, bacon and gelatin; vegetables, if starch digestion good; bread and cereals. *Harrington.* 351

Intestinal Paresis, Postoperative. TREATMENT. Pituitary extract used in 21 laparotomy cases. Dose, 16 minims (1 c.c.), commenced six hours after operation and repeated every few hours until 18 doses given. All patients passed flatus freely within a few hours, and were free of pain and distention. In all cases but 2, bowel action was obtained after a simple enema. Three intramuscular injections of 1 c.c. each recommended during first twenty-four hours as routine practice in laparotomy cases. Pulse rate remains much lower than usual. *Bidwell.* 44

Ivy Poisoning. TREATMENT. Lead water and laudanum, with addition of ½ to 1 dram (2 to 4 c.c.) of sodium hyposulphite to the ounce, recommended as local application. Fluidextract of grindelia robusta, diluted with 10 to 15 parts of water and applied frequently or constantly with gauze, also often acts well. Where solutions applied on gauze, parts should be well cleansed and dressings changed daily. Internal use of small doses of tincture of rhus toxicodendron brings about immunity to poison ivy. *Attix.* 543

Jaundice, Catarrhal. TREATMENT. Cold injections of water or normal saline solution recommended, favoring biliary flow by promoting peristalsis. *Polain-Cartier.* 38

Laryngitis, Acute. TREATMENT. Freshly powdered cubeb, taken frequently and in moderate amount dry on tongue, found of service in acute throat disorders. *Beverley Robinson.* 47

Lichen Planus. TREATMENT. Tar emulsion baths found effective in a severe case: Oil of cade, 50 Gm. (1½ ounces); black soap, 25 Gm. (6 drams); water, 50 Gm. To be added to bath taken daily. *Balzer, Godlewski, and Condat.* 485

Lupus. TREATMENT. Pfannenstiel's method found useful in lupus of nasal mucous membranes. Give patient 45 grains (3 Gm.) of sodium iodide daily, divided into 6 doses. Every morning cleanse nasal cavity of crusts with nasal douche containing sodium chloride and boric acid, and, after drying, insert tampon of sterile gauze, in contact with affected parts. Have patient keep tampon constantly moist with 2 per cent. hydrogen peroxide solution. Free iodine is thus liberated from iodide excreted by nasal mucosa, exerting its effect on lesions. In early cases ulcerations heal in one to three weeks. *Sequeira.* 102

Mixture made by addition of solid carbon dioxide to ether or alcohol found valuable for superficial lesions. Far superior to solid CO_2 alone in that part under treatment is visible and, however irregular, can be exactly defined; in giving slightly less pain; in yielding much better cosmetic effect, and in requiring no special apparatus beyond cylinder of compressed liquid CO_2. Mixture is applied with camel's hair brush or cotton on wooden holder. If it is painted on continuously for

about one minute, a bleb appears a few hours after; when this ruptures, superficial ulcer is left, which heals well under small doses of X-rays and mild antiseptic applications. *Sibley.* Page 603

Mastoiditis. DIAGNOSIS. A small mastoid process with thick outer cortex and small antrum is especially subject to "atypical" mastoiditis, condition escaping detection until serious complications appear. Suspicious symptoms in such cases are: 1. Discharge from ear more profuse than one would readily expect from middle ear alone and continuing profuse for two or three weeks. 2. Increased swelling of posterosuperior wall of external auditory canal. X-ray found useful for early diagnosis in a number of cases. *Crockett.* 41

Blurring of outline of tip of mastoid elicited by grasping both mastoids anteriorly and posteriorly between fingers and noting difference of definiteness of outline on the healthy and abnormal sides found valuable as corroborative evidence in early, doubtful cases of mastoiditis. Swelling from otitis externa may be confusing, but this is usually reduced in a few days by local treatment and ice-bag, while blurring of mastoid remains. *Alderton.* 104

Melæna Neonatorum. ETIOLOGY. Condition ascribed to oral infection; "mouth-cleansing" after birth considered inadvisable, giving chance for introduction of organisms. TREATMENT. Desperate case saved by injections of human blood-serum, doses of 20, 18, 10, 6, 18, 14, and 6 c.c. being given in four days. Method of securing serum was ordinary venesection (after careful skin cleansing), serum being allowed to separate spontaneously from clot in ¼-liter flasks. Injections made with antitoxin syringe anywhere from scapulæ to buttocks. *Nicholson.* 172

Myxedema. DIAGNOSIS. Where, in presence of puffy eyelids or dyspnea, physical examination does not yield evidence of renal or heart lesions, the existence of incipient or incomplete myxedema should be suspected. Therapeutic test—thyroid preparations in moderate dosage for a month—will confirm or disprove existence of hypothyroidism. *Butler.* 348

Nævus Pigmentosus. TREATMENT. Repeated application of formaldehyde recommended (*v.* Verruca, Treatment). *Hammond.* 539

Nasal Accessory Sinuses, Inflammation of. TREATMENT. In acute cases: 1. Calomel followed by a saline, then by diaphoresis with hot lemonade. 2. Liquid diet. 3. Acetylsalicylic acid or hexamethylenamine, to reduce suppuration. 4. Atropine sometimes valuable, but to be used with care. 5. Locally, application with cotton swab of 2 per cent. cocaine solution, followed by epinephrin, then by 4 per cent. antipyrin. Spray of epinephrin in alkaline medium every two or three hours. 6. After thorough contraction of mucosæ, clear opening of sinus or sinuses with swab and irrigate nose gently with warm saline solution containing a little sodium bicarbonate. 7. Oily spray of menthol and camphor. 8. Mild suction with exhaust bulb or Brawley apparatus. 9. Leucodescent lamp to relieve discomfort. 10. Hot applications. 11. Irrigation of sinuses (difficult, sometimes impossible without removal of bone). If condition unrelieved in a few days, operation. In subacute cases, same treatment + autovaccines. Latter also useful to hasten recovery in acute cases. *Miller.* 173

Nephritis. TREATMENT. Mild forms of nephritis probably often recover after renal decapsulation (doubtless some of these would recover under medical measures). In a case of acute interstitial nephritis with miliary abscess formation, patient recovered apparently because of decapsulation and scarification of cortex. Patients with high-grade parenchymatous change may be given a respite for six months to several years, but their symptoms will probably eventually recur; in such cases, a secondary decapsulation is to be considered. In parenchymatous nephritis with marked general edema, relief is generally so transient as to make operation of questionable value. *Babcock.* 257

Following diet useful in protecting patient with early chronic interstitial nephritis from ultimate failure of circulatory balance: Breakfast: Large helpings of bulky fruits; an egg and 2 thin slices of bacon; a slice of bread, or an equivalent of toast, muffin, waffles, cereal, etc.; tea, cocoa, coffee, milk, water, or carbonated water. Luncheon: Large helping of some vegetable salad, with pickles, olives, or other relish; a moderate amount of cheese; breads and liquids as at breakfast. Dinner: Vegetable, milk, or cream soup; piece of meat, fowl, fish, or game, about 2 x 2 x ½ inch in size; gravies in moderation; freely of all kinds of succulent vegetables, though moderately of potato, rice and other starchy foods; breads and liquids as at breakfast; a simple dessert. Total of food taken should be smallest which will maintain nutrition at highest level, as judged by body weight and sense of well-being. Where tendency to increase of weight, reduce amount of bread, potato and other starchy foods, and *vice versâ*. Upon rising and two and one-half or three hours after meals, a small glass of water or carbonated water should be taken. Moderate physical exercise desirable; if impossible, replace it by massage. Take body weight, measure all liquids taken and voided, and examine urine, weekly. Once in four weeks, give 2 freshly made 5-grain pills of mercurial mass every night for three days, followed the first time by ½ ounce of castor oil in morning, and the other two mornings by a saline. *Wells.* 354

Neurasthenia. TREATMENT. Measures found useful in certain forms described: 1. Where complaint of chilly sensations, cold

hands and feet, lack of perspiration, irregular muscular pains, and physical inertia, without signs of heart weakness, ordinary treatment is greatly aided by small amounts of thyroid substance, 1 grain (0.06 Gm.) two or three times daily. Improvement in ten days; stop drug for a week, then resume, etc. 2. Where constant restlessness and activity, with sense of heat, bright eyes, shiny and moist skin, glossy hair, tremor, exaggerated knee-jerks, abnormal hunger, diarrhea and menstrual flow, and pulse 80 to 90, remedies such as belladonna, hydrastis, thyroidectin, ergot, and bromides, and ice applications to thyroid gland for half an hour three or four times daily, are likely to benefit. 3. Where patient abnormally fat, with constant gain in weight, lack of ambition, craving for sweets, and headaches, pituitary extract, or thyroid substance (1 or 2 grains a day), often does good. *Starr.* Page 609

Corpus luteum found very effective in women over 35, complaining of nervousness, of being very easily fatigued, especially at the periods, sometimes of slight dyspepsia and psychic depression. Author gives about 9 tablets each of 20 grains (1.3 Gm.) of fresh corpus luteum of sow daily in the ten days before menstruation, reduces this to 6 during flow and to 3 until next period. Carried out one month, will give relief for many succeeding months. *Burnam.* 666

Orchitis. TREATMENT. Case of unilateral orchitis, apparently originating by metastasis from primary foci in inflamed tonsils, in which hexamethylenamine in doses of 15 grains (1 Gm.) every six hours, later reduced to 5 grains (0.33 Gm.), brought about rapid improvement. *Prouty.* 544

Osteomalacia. TREATMENT. Daily doses of 3 to 5 dessertspoonfuls of a 0.01 per cent. solution of phosphorus in codliver oil, with rest in bed and baths as adjuvants, used with success in 6 cases of senile osteomalacia. *Reich.* 356

Otitis Media, Acute. TREATMENT. Relation of acute pharyngitis, nasal-sinus, middle-ear, and mastoid inflammations to an "active autotoxic state" of the system emphasized. Calomel in 1/10-grain (0.006 Gm.) doses, frequently repeated up to 1 or 1½ grains, found valuable to stimulate defensive powers of body and shorten convalescence. Used in combination with local treatment. Calomel, followed by castor oil or salines, given every other day. *Snow.* 42

Pain, Local. TREATMENT. Combination of menthol and methyl salicylate in hydrated wool-fat, covered with cotton and gauze bandage, recommended to relieve local pain where skin is intact. *Beverley Robinson.* 47

Paralysis, General. TREATMENT. Salvarsan administered intravenously in a case of paresis in maniacal stage, with marked improvement. *Holland.* 73

Two cases reported in which salvarsan was of distinct benefit. *Daland.* 298

Pharyngitis. TREATMENT. Where swollen lateral bands alone present, paint them with zinc chloride solution (gr. xv-f℥j) or touch with galvanocautery. "Nervous cough" is often kept up by swelling of the lateral bands; these should then be painted gently with deliquescent trichloracetic acid, followed by brushing with sodium carbonate. *Grant.* 363

Placenta Prævia. TREATMENT. Absolute quiet, rupture of membranes when required, and irrigation with hot water recommended. Water should be at 45° to 48° C. (113° to 118° F.), and at least 7 or 8 liters of it should be used. Repeat irrigation if necessary to check hemorrhage. Seventy cases thus treated without a death. Infection from tampon and mishaps in version or introduction of bag thereby avoided. When hemorrhage arrested, spontaneous expulsion of fetus to be patiently awaited. Instrumental dilatation contraindicated. *De Bovis.* 44

Pleuritis. DIAGNOSIS. X-ray studies showed that location of fluid in chest in serofibrinous pleurisy depends upon the position assumed most constantly by patient during acute stage, and that exudates of this type are but slightly, if at all, mobile. These facts are of assistance in differentiation of serofibrinous from other varieties of effusion. *Engelbach and Carman.* 106

Pneumonia, Lobar. TREATMENT. Creosote inhalations and moderate bloodletting, especially with leeches, recommended. *Beverley Robinson.* 47

Stock pneumobacterins, in doses of 25 to 600 millions, used in 20 cases, with 15 per cent. mortality; 30 other similar cases, under usual methods of treatment, showed 40 per cent. mortality. In some of the cases, strikingly prompt benefit followed use of bacterins; in others results were less marked or *nil.* Results seemed more definite with the larger doses. Dosage can be adjusted according to clinical phenomena; where malaise, headache, chilliness, or definite rigors, with rise of temperature, follow an injection, it is unwise to increase dose. *Robertson and Illman.* 107

Intramuscular injections of quinine and urea hydrochloride used in 192 cases of lobar and lobular pneumonia; mortality 12 per cent. Initial dose, 15 to 25 grains (1 to 1.6 Gm.), repeated in three or four hours, and perhaps once or twice again in first twenty-four hours. Same plan on second day of treatment, and on third, if necessary. Smaller doses, 5 to 10 grains, then sometimes continued by mouth. Results: Temperature and pulse rate gradually fall, respiration more rapidly; termination by lysis in five to twelve days. Procedure in injecting: Paint skin with iodine tincture, fill syringe with 50 per cent. solution of the quinine salt in sterile water; inject deeply into a muscle, emptying syringe thoroughly; withdraw needle, and seal puncture with collodion: no local ill results. Additional treatment: The

usual hygienic and drug measures; saline infusion; sodium bicarbonate or ammonium compounds in sufficient amount to keep urine alkaline; tincture of ferric chloride when quinine withdrawn. *Solis-Cohen.* Page 235

In cases with blood-pressure below 110 mm. Hg and other symptoms of vasomotor paresis present (pulse soft, cyanosis not prominent, extremities warm), epinephrin in 10-minim (0.6 c.c.) doses of 1: 1000 solution should be given intramuscularly, even before signs of pulmonary edema appear. If latter develops suddenly, give 15-minim (1 c.c.) doses every twenty minutes for 4 to 6 doses or until the symptoms are controlled; repeat series of injections later if required. In pulmonary edema accompanying dilatation of heart due to toxic degeneration of muscle or added to the myocarditis of old persons, however, epinephrin will accentuate the dilatation, and is contraindicated. These cases are differentiated by fact that blood-pressure is high,—125 to 170 mm.,—cyanosis is marked from the start, extremities are cold, first heart-sound loses muscular quality, and pulse is small, of high tension, and irregular in frequency and size; physical examination may reveal cardiac enlargement, with descent of apex. *Brown.* 297

Camphor-oil injections used in 37 cases, with but 1 death. Ten c.c. of a 30 per cent. camphorated oil, injected hypodermically to each 100 pounds of body weight every eight to twelve hours, are harmless and materially assist in overcoming toxemia, especially if begun early. Sterilize oil in boiling-water bath, draw into sterile syringe, and inject, after iodine disinfection of skin, into outer aspect of thigh. In lean persons 20 c.c. may be injected in 1 place; in fat patients, in 2 places. *Seibert.* 545

Pneumoperitoneum. Diagnosis. In presence of free gas in peritoneal cavity, there occurs a concentric diminution of area of hepatic dullness, *i.e.*, dullness disappears at same time from upper border of liver downward and from lower border of liver upward. In tympanites, on the other hand, liver dullness disappears from below upward only. This distinction found useful in early diagnosis of perforation in typhoid fever. *Berg.* 108

Pneumothorax. Diagnosis. Positive coin test, displacement of heart, and, in right-sided cases, displacement of liver are the most important diagnostic signs, occurring in about 90 per cent. of cases. Succussion splash and metallic tinkle occur in 30 or 40 per cent. *Cruice.* 46

Poisoning by Acids. Treatment. Case of sulphuric acid poisoning reported in which, when patient comatose, intravenous injection of 300 c.c. of a 5 per cent. solution of sodium carbonate caused immediate return of consciousness. Ultimate recovery. *Marchand.* 357

Poliomyelitis, Acute. Etiology. Poliomyelitis is propagated by dust. Nasopharynx is probably point of entry. *Neustaedter and Thro.* 46

Diagnosis. Lumbar puncture shown to be valuable in distinguishing poliomyelitis of meningeal type from acute cerebrospinal meningitis. Negativity of cerebrospinal fluid in poliomyelitis diagnostic; in meningitis, fluid shows marked turbidity, coarse clot formation, great excess of albumin, copious deposit of polymorphonuclear cells, and meningococci. *Forbes.* 46

Importance of thoroughly cleaning out alimentary canal at earliest period of disease emphasized; copious enemata high up found useful. Retention of urine may also require treatment with warm baths, hot compresses to abdomen, or, ultimately, catheterization. *Bogardus.* 175

Treatment. Following procedure carried out in 5 cases with good results: Thoroughly cleanse alimentary canal, bandage limb or limbs lightly with cotton to keep them warm, give stimulating liquid diet and strychnine in minute doses, and apply Bier cups intermittently to both sides of spine and directly over posterior process from sacrum to cervical region, for one hour daily. Continue this regularly until muscular soreness has disappeared and voluntary motion in affected muscles begins to return. Where treatment can be begun a day or two after initial attack, soreness diminishes about fourth day and motion returns slightly about tenth or twelfth day. Then start massage and gradually allow general diet. *McIlhenny.* 533

Postnasal Catarrh in Children. Treatment. If condition acute, paint throat several times daily with boroglyceride, or, in older children, spray with a ¼ grain to the ounce solution of tartrated antimony while patient inspires deeply. Later, add an equal amount of glycerite of tannin to the boroglyceride. Where painting throat resisted, instill into nostril several times daily, while child lies back with head on pillow, a solution of 5 to 10 grains of resorcin to the ounce of saline solution, 10 grains of boric acid to the ounce of water, or 15 grains of sodium bicarbonate to the ounce. As redness of pharynx fades, apply pure glycerite of tannin or a paint of 12 grains of iodine and 15 grains of potassium iodide to the ounce of glycerin, with 5 drops of oil of cinnamon or peppermint. After all redness gone, use an astringent iron paint of 1 dram of the stronger iron perchloride to an ounce of glycerin. For anorexia: an iron tonic; stay in country or at seaside. Keep child well protected from cold for some time after. *Eustace Smith.* 34

Postoperative Shock. Prophylaxis. Subcutaneous injections of epinephrin, 0.0004 to 0.0006 Gm., given regularly, to all cases operated, at start of anesthesia. Regularizes narcosis and lessens or eliminates operative

shock. Where a patient remains asthenic for a day after operation further injections of 0.0004 Gm. may be given with advantage. *Delbet, Herrenschmidt, and Beaury.* Page 534

Pruritus. TREATMENT. Venesection to the extent of 100 or 200 c.c., followed by injection of 300 to 700 c.c. of 0.9 per cent. sterile salt solution through same cannula, found to relieve itching at once, with subsequent cure or marked improvement. Procedure repeated 3 to 6 or more times, at intervals of five or six days. No untoward effects. *Simon.* 365

Pruritus Ani. TREATMENT. Idiopathic pruritus ani believed to be caused by streptococcic infection of skin. In 8 cases treated with autogenous vaccines made from organisms on skin, results were excellent, itching disappearing or growing less after 4 or 5 injections. *Murray.* 359

Burrowing of crypts of Morgagni beneath anal mucocutaneous membrane found responsible for many cases of pruritus ani where local remedies and dietary failed. After excision of these tracts, condition disappeared (*v.* Hemorrhoids, Treatment). *Tuttle.* 537

In employing autogenous vaccines in pruritus ani, avoid excessive reaction, give small initial doses, and repeat injections only after previous reaction subsided. *Murray.* 673

Psoriasis. TREATMENT. Put patient in warm bath (98° F.), to which, if skin tender and irritated, chamomile and bran or washing soda are added. Rub skin slightly once or twice with green soap, wash off, and remove scales. Next wash with 1: 1000 mercury bichloride, then tar skin well with: Olei rusci, olei fagi pinguis (fresh), of each, 20.0 (3v); alcoholis diluti, 10.0 (3iiss). Patient then remains in bath twenty to thirty minutes, after which tar is washed off and affected parts treated with: Acidi salicylici, 1.0 (gr. xvj); sulphuris præcipitati, 4.0 (3j); zinci oxidi, amyli tritici, of each 1.0 (gr. xvj); petrolati, 25.0 (3vj). Dust talcum powder thickly over parts. Two days later, apply a 10 per cent. ointment of pyrogallol in hydrated wool-fat, followed by talcum, and after two days more, a 25 per cent. ointment of chrysarobin. For psoriasis of face, use following formula: Unguenti hydrargyri ammoniati, pyrogallolis, of each, 1.0 (gr. xvj); unguenti zinci benzoatis, q. s. ad 25.0 (3vj). For psoriasis of scalp, wash with 1: 1000 mercury bichloride. Internally, give phenol and arsenic trioxide in separate pills, to be continued for a longer time than local treatment. Hygiene: Plenty of fresh air and rest. Bland diet, avoiding meat and alcohol, at least for a time. *Bernheim.* 327

Following preparation recommended for addition to baths given for removal of scales: Oil of cade, 50 Gm. (1½ ounces); black soap, 25 Gm. (6 drams); water, 50 Gm. Yolk of egg and a little fluidextract of quillaja may be added. Patient is to soak in bath and rub patches for ten or fifteen minutes. Chrysarobin, 2 Gm. (30 grains), or pyrogallol, 1 or 2 Gm., may also be used in the preparation. Patient is to apply petrolatum to patches in daytime, then take bath, and reapply petrolatum at night. For tar folliculitis, use methylene blue. *Balzer, Godlewski, and Condat.* 485

Psychoses. TREATMENT. Seven cases—4 in children—reported in which pronounced mental disturbances were shown due to dental impaction, alveolar abscess, or other conditions affecting teeth, and cure or great improvement resulted upon remedying these states. Importance of X-ray examination of teeth and jaws in psychoses emphasized. *Upson.* 129

Puerperal Sepsis. TREATMENT. Intravenous injections of mercury bichloride used in 11 cases, with 6 recoveries. Measure considered worthy of trial in severe cases. Twenty drops of a 1 per cent. solution injected once or twice daily; 1 to 4 grains of bichloride used during the treatment. Precautions necessary: 1. Teeth to be carefully cleansed. 2. Salines to be omitted during treatment. *Stowe.* 110

Outdoor treatment of severe puerperal infections found usually to bring about rapid improvement and to lower mortality by nearly 20 per cent. Sunlight as important as air. Patients kept out of doors on a wheel bed, to be moved in again when necessary. General condition strikingly well maintained in the prolonged pyrexias. Other measures: Iron, arsenic, strychnine, alcohol, fluids copiously by mouth, saline enteroclysis in severe cases, alcohol and cold sponge baths for pyrexia, hot or cold applications for abdominal pain and distention. Curettage contraindicated, increasing mortality 10 per cent.; local treatment to be limited to a single intrauterine douche of sterile salt solution. *Yaung and Williams.* 236

Pulmonary Abscess. TREATMENT. Inversion of patient found effective for evacuation of pus in a case of pulmonary and hepatic abscess; rapid recovery. Postural method suggested for trial in lung abscess and bronchiectasis before resort to surgery. *McKechnie.* 486

Quinsy. TREATMENT. Early probing advocated, in order to drain pus accumulation at its inception. With aid of reflected light and tongue depressor, tonsillar fossæ, especially upper ones, are entered in turn by means of a tonsil slitter or probe. Where bottom appears soft, rounded point of instrument is pushed deeper into tissues, capsule pierced, and peritonsillar space entered. The small amount of pus thus evacuated gives a sense of relief and infection stops. This can be carried out in about 8 out of 10 cases. It is practically painless and bloodless. *Schuster.* 360

Raynaud's Disease. TREATMENT. Apply liquid ichthyol in 10 per cent. strength locally. Internally, large doses of potassium iodide

are very beneficial. Rest in bed and hot applications of some antiseptic solution to the affected members are useful. Where gangrene, amputation may be all that is necessary, but healing is tedious. *Beck.* Page 298

Renal Traumatism. TREATMENT. After crushing injuries of renal substance spontaneous repair is usual. Operation should not be done unless there is evidence of intraperitoneal leakage, progressive hemorrhage, urinary extravasation, or sepsis. *Babcock.* 257

Rheumatism, Acute Articular. TREATMENT. *Streptococcus pyogenes* vaccine used in 6 cases, in 4 of which no salicylates were given, with good results. Temperature quickly fell in every case, pain ceased, and inflammatory phenomena disappeared. Stock vaccine from several strains of streptococcus used in these cases, but author thinks it preferable to employ a mixed streptococcus and staphylococcus (*aureus* and *albus*) vaccine. *Wolferton.* 48

Rheumatism, Chronic. TREATMENT. In rheumatic conditions associated with anemia and in sore throat of rheumatic origin, following mixture recommended: Dissolve 1 dram (4 Gm.) of sodium salicylate in 2 ounces (60 c.c.) of water. Add liquor ferri perchloridi, plus an ounce of water, giving dark purple mixture. Then add 1 dram of potassium bicarbonate dissolved in 1 ounce of water, and fill up bottle to 8 ounces with water. *Drinkwater.* 51

Lime-poor diet found useful in certain forms of subacute and chronic arthritis, especially deforming arthritis, cases with joint pains following acute polyarthritis, and cases of chronic spinal ankylosis. Cases should be selected by test-diet, to make sure of calcium retention, as other patients will not respond to the treatment. Articles of food allowed in lime-poor diet: White or aleuronat bread, rice, tapioca, wheat flakes, sago, tomatoes, mushrooms, white of egg, meat bouillon, beef, calves' liver, tongue, sweets, vegetable fats, light beer, carbonated waters, port. Distilled water to be used in preparation of food. After six or eight weeks restrictions may be somewhat relaxed. *Hirschberg.* 110

Combination of sodium citrate with salicylate recommended: Sodii citratis, 30 Gm. (7½ drams); sodii salicylatis, 20 Gm. (5 drams); aquæ, 120 Gm. (30 drams); one teaspoonful in a cup of hot water half-hour before each meal and at bedtime. *Hemenway.* 417

Rhinitis, Chronic. TREATMENT. To clear and moisten nasal passage, following formula useful: Sodium chloride and salicylate, of each, 45 grains (3 Gm.); sodium borate and potassium chlorate, of each, 96 grains (6.5 Gm.); glycerin, 1 dram (4 c.c.); water, 6 ounces (200 c.c.). Two teaspoonfuls of this are to be added to 1 ounce of warm water and used to spray or sniff up nostrils occasionally. When fetor present: Phenol, 1 grain (0.06 Gm.); sodium bicarbonate, 4 grains (0.24 Gm.); warm water, 1 ounce (32 c.c.). To dissolve away purulent discharges: Sodium sulphate, 20 grains (1.3 Gm.) to the ounce. Where recurrent catarrh due to intranasal irregularities, remove latter. If surgery inadequate, use vaccines, and if sinusitis present wash out sinus daily for a week with a warm antiseptic solution. Where discharge accumulates in nasopharynx, use mixture of menthol, 10 grains (0.6 Gm.), and spirits of wine, 1 dram (4 c.c.) to 1 ounce (30 c.c.) of water, 1 dram of which is placed in ¾ pint of nearly boiling water and the vapor inhaled through mouth and exhaled through nose for ten minutes every two hours. Discharge may be thinned and partially removed by sniffing up nostrils a warm antiseptic alkaline lotion, after which an ointment of menthol, 4 grains (0.25 Gm.), and eucalyptol, 20 minims (1.25 c.c.), to 1 ounce (32 Gm.) of yellow petrolatum may be used. *Stuart-Low.* 422

Rhus Poisoning. TREATMENT. Aluminum acetate solution recommended for local application (*v.* Furuncle). *Stansbury.* 227

Salpingitis. TREATMENT. Forcible intrauterine injection of iodine advocated in conservative treatment of subacute salpingitis or small pustules. After gentle dilatation of cervix, a 2-ounce glass syringe with conical nozzle is filled one-half with diluted iodine tincture (25 per cent.) and uterine cavity filled and distended with all force syringe will permit, for about two minutes. Iodine reaches every irregularity of uterine cavity as well as, usually, mucosa of tubes. Abdomen is then opened, excess of iodine sponged away, or, if tube evidently not entered by it, injection made to distend tube strongly. Next any removal of tissue necessary is carried out, though conservation is the chief aim. Tube is to be attached lightly to upper border of broad ligament, to prevent descent. No pain or untoward results produced. *Stone.* 613

Scarlet Fever. DIAGNOSIS. Usefulness of Pastia's sign emphasized. Consists in a deep-rose-colored, linear exanthema in skin folds of anterior aspect of elbow. Lines usually 2 to 4 in number; can be caused to stand out in contrast by exerting gentle pressure on skin, then quickly removing it; occasionally visible in other flexures. Sign uniformly present in 73 cases, appearing with rash and generally lasting two or three weeks longer than rash. Occurs in other diseases only in such cases as can easily be differentiated from scarlatina. In 6 cases of latter with atypical rash, the sign led to proper diagnosis. *Taubles.* 612

Sciatica. TREATMENT. Where acute attack, in spite of the usual measures, persists longer than ten to fourteen days, sulphur baths or hot carbon dioxide baths (102.7° to 104° F., and lasting twenty minutes) should be employed, or heat applied in other ways. If ineffective, author counsels treatment by

injections of saline solution and air: 1. Injection of 800 to 1000 c.c. of air, filtered through cotton, under skin on outer aspect of leg. 2. Injection of 60 to 80 c.c. of 0.8 per cent. salt solution, with 0.01 to 0.02 Gm. of novocaine added, just below sacrosciatic notch, as close to nerve as possible. 3. Injection of 10 to 20 c.c. of salt solution, with 0.01 Gm. of novocaine into epidural space of inferior lumbar region, needle being passed in and up through coccygeal notch; preliminary anesthesia of course of injection with novocaine. 4. Where very severe pain and contractures of lumbar muscles, injection of 10 to 15 c.c. of salt solution between third and fourth lumbar vertebræ into epidural space. Injections to be repeated at intervals of three or four days, substituting 1 to 1.2 per cent. for 0.8 per cent. saline. Two to five series of injections cure obstinate cases. *Sicard.* Page 114

Injections of sterile normal saline solution near sciatic nerve employed in 25 patients with following results: 13 cured; 10 improved, most of them being enabled to resume former occupations; 2 unimproved. *Leszynsky.* 675

Seborrhea of Scalp. TREATMENT. Acne bacillus vaccine used in 7 cases of true seborrhea of scalp,—the commonest cause of baldness in men. Sabouraud microbacillus found in scrapings from scalp in these cases. Dose of acne vaccine, 75 to 300 million; number of injections, 4 to 16. In all cases improvement of greasiness was obtained, in most cases hairfall markedly reduced, and, in some, complete return to normal. *Savill.* 676

Semilunar Cartilage of Knee, Dislocation of. TREATMENT. Mold piece of sole leather 4 inches long and 1¾ inches wide to inner side of knee, first soaking it in water and cutting edges smooth. Fasten over the displaced cartilage by adhesive straps—2 vertical, 1 horizontal, and 1 oblique—and cover with fairly firm bandage. Patient may walk as usual, notwithstanding soreness. Bandage renewed every ten days. After 3 such treatments condition is well, an aseptic adhesive inflammation having taken place, and only a bandage need be used. *Chandler.* 171

Sinuses. TREATMENT. Following paste used with success in treating a discharging sinus in a breast cancer, after Beck's paste had failed: Bismuth subnitrate, 30 Gm. (1 ounce); petrolatum, 60 Gm. (2 ounces); white wax and paraffin, of each, 5 Gm. (80 grains), and iodine tincture, 2 Gm. (30 minims). The tincture is added after other ingredients mixed. Paste to be stirred when used. Where large amount to be employed, diminish proportion of iodine. *Green.* 177

Sinusitis, Chronic. TREATMENT. Case of chronic frontal sinusitis with recurring severe pain at root of nose in which giving of hexamethylenamine, 4 grains (0.25 Gm.) three times daily for a month, brought relief from pain. *Eisenberg.* 606

Small-pox. TREATMENT. Mixture of 10 per cent. iodine and 90 per cent. glycerin painted over pustules 2 or 3 times daily in 85 cases; caused drying of lesions and arrest of tissue destruction, and prevented pockmarks. Pustules on face may be opened with sterile instrument and touched with iodine tincture. Desquamation frequently almost completed in four to six days. All cases recovered. *Rockhill.* 115

Splanchnoptosis. TREATMENT. Simple method of supporting viscera described: Shave hair from lower abdomen; place strip of zinc oxide adhesive plaster 2 to 2½ inches wide by 5 to 6 inches long across extreme lower abdomen; attach to each end of it a bandage of same width to reach around body above iliac crest and be fastened behind; have bandage well padded with cotton. Avoid skin irritation by plaster by removing it occasionally, cleansing skin, and using a dusting powder. Improve general and local muscular tone by means of massage, electricity, treatment of gastrointestinal tract, correct living, and suitable diet. *McCaskey.* 238

Syphilis. TREATMENT. Salvarsan given intravenously in 10 pregnant women in doses of 0.5 Gm. and subcutaneously in 8 newborn infants in doses of 0.03 Gm. Injections in women in dose mentioned found to be not without danger to fetus, pronounced weakening in heart-sounds being noted in days succeeding injection in one-half the cases. Child of a mother given first injection of salvarsan five and one-half months before parturition was born healthy; a child born seventy-two days after salvarsan injection was syphilitic. In the new born, salvarsan was found to act promptly on pemphigus and to cause disappearance of spirochetæ from lesions; it is capable of producing prompt and lasting recovery from hydrocephalus of syphilitic origin. Smaller doses now advocated by author: 0.2 Gm. for pregnant women, repeated in six days; 0.01 for newborn infants, repeated twice or thrice at six-day intervals. *Bar.* 49

Sodium cacodylate used in 43 cases, each patient receiving 14 to 16 injections on successive days. Fresh solution of the drug, 1 in 10 of distilled water prepared daily. Injections at first subcutaneous, then intramuscular. Dosage: 3 grains daily, increased as results noted up to 5 or 6 grains. No untoward effects except, rarely, slight muscular pains or spasm. Conclusion reached: Drug useful in syphilis, giving results not unlike those of salvarsan, though less rapid. Best effects in early syphilis, on initial lesion, maculoroseolar or papular eruption, mucous patches and condylomata; also has an excellent alterative effect. Place patient on mercury immediately after course of cacodylate injections ended. *Spivak.* 362

Best results are obtained by use of salvarsan followed by mercury. Give repeated doses of former, to prevent relapses, making 3 or

4 injections at intervals of about eight weeks, unless relapse occurs earlier, when an injection should be given at once. Exception to this rule should be made where Wassermann is repeatedly negative after first or second injection of salvarsan, and all symptoms have disappeared. Salvarsan does not produce strains of spirochetes resistant to itself, as formerly supposed. *Anders.* Page 385

Rectal administration of salvarsan considered useful as substitute for intravenous or subcutaneous methods in cachectic cases or those with cardiovascular lesions. Suppositories of cocoa butter containing 0.1 Gm. of drug used. Introduced in late afternoon, suppository is absorbed by next morning. Slight local irritation for two or three hours induced; may be prevented by adding a little cocaine to suppository. To adults, 0.6 Gm. altogether is given, 1 suppository being used every week for six weeks. *Bagrow.* 488

Following plan of using neosalvarsan advised: In primary syphilis, 2 initial intravenous doses generally given, followed by third at interval of four weeks. In secondary stage: 3 injections at first, with a fourth eight weeks later. In tertiary stage: Continue treatment every two months after initial course until negative Wassermann obtained. Used intramuscularly, neosalvarsan is absorbed much more rapidly than salvarsan. *McIntosh, Fildes, and Parker.* 608

Following plan of treating congenital syphilis recommended: Mercury bichloride in solution of 1 grain (0.06 Gm.) to 1 ounce (30 c.c.) used. One drop given five times daily after nursing to any infant under 1 year; increased every second or third day by 1 drop, till 10 are being given; then if desired, more gradually up to 16 or 17 drops. Where stools exceed 3 daily and are thin, give $\frac{1}{10}$ grain (0.006 Gm.) doses of Dover's powder or 3- to 5- drop doses of paregoric one to three times daily. Where necessary, give in addition inunctions of unguentum hydrargyri. With older children, $\frac{1}{20}$ to $\frac{1}{16}$ grain (0.003 to 0.0037 Gm.) of bichloride can be given daily. Where late or remote (tertiary) symptoms encountered, bichloride is usually given two weeks; then potassium iodide, well diluted in doses of 3 to 15 grains (0.2 to 1 Gm.) t. i. d. Treatment to be administered continually at least one year. In second year two months' treatment to be followed by one month's intermission, in third and fourth years by two months' intermission. After this, if no symptoms present, treatment may be limited to a specific tonic one month out of every six, to be continued practically indefinitely, and consisting of $\frac{1}{20}$ to $\frac{1}{12}$ grain (0.003 to 0.005 Gm.) a day, to which may be added potassium iodide, 5 to 10 grains (0.3 to 0.6 Gm.) three times daily. *Hoag.* 676

Tabes Dorsalis. TREATMENT. Salvarsan administered intravenously in 4 cases, along with hydrotherapeutic measures, with striking improvement. *Holland.* 73

Two cases reported, under treatment for over a year, in which lancinating pains were controlled, muscular inco-ordination improved, and Wassermann reaction became negative. *Daland.* 298

Tachycardia, Paroxysmal. TREATMENT. Attack of tachycardia in a woman relieved as follows: Patient being seated, physician's right hand was placed flat over heart, left hand on back, and patient directed to take deep breath, close glottis, and fix strongly walls of chest. Chest walls were then squeezed with some force, attempting to exert pressure on upper part of heart. Immediate relief and fall of pulse rate from 220 to 110. *Rich.* 233

Tapeworm. DIAGNOSIS. Deep pétrissage of abdomen recommended as aid to diagnosis of tapeworm. Series of circular movements executed by hand in direction of large intestine with enough energy to cause thorough kneading of abdominal contents. Procedure harmless and reveals worms sometimes when purgatives have failed. Three or four fifteen-minute applications of deep pétrissage generally required. Administration of purgatives in cases where contraindicated thus avoided. *Cyriax.* 426

Tetanus. TREATMENT. Phenol injections used in 5 consecutive cases, all recovering; 2 other cases treated with antitoxin died. Ten minims of 10 per cent. solution of pure phenol in sterile water, diluted to 30 or 40 minims, injected deep into muscles, at first every three hours, later at longer intervals as improvement appeared. Injections made into buttocks, deltoids, or pectorals. No untoward results. Urine, however, should be watched for smoky color, as a precaution. Severity of convulsions always diminished by the treatment, sometimes after third or fourth dose. In fully developed cases, second dose to be given one hour after first. Original wound to be excised or cauterized, as usual, with strong solutions of phenol, silver nitrate, or nitric acid. *Kintzing.* 115

Use of intravenous phenol injections, beginning with 2 to 3 grains (0.13 to 0.195 Gm.) two or three times daily, and rapidly increasing up to 5 grains (0.325 Gm.), advocated. Employ 1 or 2 per cent. solution of phenol. Watch urine throughout. *Bernart.* 615

Tetany. TREATMENT. Removal of whey from food given to infants with tetany found advantageous. Suspension of curds of wheyless milk proved useful as food. Best prepared as follows: Bring milk to a boil, then cool to 107° F. Add chymogen, 1 dram to the quart, and keep at 107° for half an hour. Strain through cheesecloth and allow to drain an hour. Finally, put curds through fine-meshed sieve, and suspend in a solution of arrowroot flour (1 level tablespoonful to the quart). *Grulee.* 230

Tonsillitis, Acute. TREATMENT. Tincture of iodine applied locally in 400 cases in chil-

dren, with unusually prompt cures. Also used in pharyngitis, otitis media, tonsillar and nasal diphtheria, laryngitis, stomatitis, etc. For a milder application deep down in throat or in nose, equal parts glycerin and iodine tincture is satisfactory. In acute contagious diseases applications of iodine tincture to throat are of prophylactic value, combating spread of infection. *Sill.* Page 171

Brushing with 10 per cent. menthol and 3 or 4 per cent. guaiacol in olive oil often has good effect. *Grant.* 363

Following measures advised: 1. Reduction of fluids to minimum. 2. Calomel in ⅛ to ¼ grain (0.008 to 0.016 Gm.) tablets every half-hour till 2 grains taken or bowels well moved. 3. Hot mustard foot bath (1 heaping tablespoonful to pail of hot water); wrap patient in blanket and put to bed. 4. Light diet, omitting meat. 5. Quinine bisulphate, 2 grains (0.12 Gm.), with Dover's powder, 5 to 10 grains (0.3 to 0.6 Gm.), night and morning. 6. To combat exacerbations of systemic reaction: 1 or 2 drops (0.05 or 0.1 c.c.) of pure phenol, stirred in ¼ glassful of cold water, internally 2 to 8 times daily. 7. Mild gargle and spray to cleanse throat. 8. Wipe over tonsils once every one to three days with tannic acid, 1, in glycerin, 4, or tincture of ferric chloride, 1, in glycerin, 5. 9. Throat lozenges, 6 to 8 daily, with guaiacum, 1 or 2 grains (0.06 to 0.12 Gm.), or made up with camphor and menthol, of each, 1/10 grain (0.006 Gm.), and cocaine hydrochloride, 1/32 grain (0.002 Gm.). 10. Cracked ice sucked to relieve thirst and lessen inflammation. 11. Ointment or hot poultice under angles of jaw for glandular swelling and pain. 12. Where marked obstruction to breathing, linear slash with guarded bistoury through bulging tonsil. *Griffith.* 550

Trachoma. TREATMENT. Subconjunctival injections of diphtheria antitoxin used in 50 patients, 30 being practically cured and 20 greatly improved. After turning lids, eyes first washed with boric acid and saline solutions, then 1 c.c. fresh antitoxin injected in each lid from within outward. Lids then returned to normal position and another cubic centimeter injected under skin and muscle of upper lid. Inflammatory reaction for thirty-six hours, then disappearance of granules. Three or four such treatments given successively. *Pachopos.* 178

Tuberculosis. TREATMENT. Tuberculin applied locally in 10 cases, comprising suppurative cervical adenitis, anal fistula, and sinuses, with early cures in previously rebellious cases. Parts first irrigated with salt solution, then tuberculin solution sprayed on, or, in sinuses, introduced with syringe and flexible cannula. Mouth of sinus sealed with collodion for several hours. Initial dose must be small; later dose is carefully increased, avoiding general reaction. Locally there is pronounced reaction at first, then stimulation of processes of repair. *Beasley.* 56

Tuberculosis, Laryngeal. TREATMENT. Yeo's continuous respirator will check cough in this condition. Preparation generally used: Creosote, 3iij (12.0); spirit of chloroform, oil of Pinus sylvestris, of each, 3iss (6.0); oil of cinnamon, oil of citronella, of each, ♏v (0.3); menthol, gr. v-x (0.3-0.6). *Grant.* 363

Tuberculosis, Pulmonary. DIAGNOSIS. Hemoptysis occurring without warning in young adults, and unassociated with further signs or symptoms of tuberculosis, is probably of tuberculous origin and should be so treated. Hemoptysis in pneumonia, bronchitis, asthma, or following trauma should lead to suspicion of an underlying tuberculous process. *Bartlett.* 101

TREATMENT. Citrate of iron hypodermically found very efficient in relieving the secondary anemia in 257 cases, 70 per cent. of which were advanced or far advanced cases. Employed routinely where reduction in hemoglobin greater than 10 per cent. Dose, 0.05 Gm. (5/6 grain), injected in buttock. Italian preparations found least irritating. Maximum benefit attained after 30 to 40 consecutive daily doses. *Bullock and Peters.* 32

Comparative study of 146 cases receiving tuberculin and 234 treated by hygienic-dietetic method alone. Conclusion reached that tuberculin is valuable in tuberculosis, especially in moderately advanced cases, and is of special value as a protection against relapse. Autogenous vaccines used in 75 other cases; temperature rapidly returned to normal, expectoration diminished, and hemorrhage was rare. *Petit.* 57

Creosote carbonate, 10 grains in capsules every three or four hours, used with satisfaction in cases of tuberculosis with sudden symptoms of pneumococcic infection (shown by malaise, moderate rise of temperature, followed by bloody sputum and preponderance of pneumococci in saliva). *F. N. Robinson.* 152

Treatment of cough discussed. Facilitate early morning cough with glass of hot water or milk with or without 1 dram of whiskey or brandy, 5 or 10 grains of sodium bicarbonate, or a little Saratoga Vichy. For irritative cough, avoid sources of irritation, such as rapid talking, laughing, smoke, etc.; control the desire to cough. Deep-breathing exercises, change of position in bed, sucking ice, sipping orange juice, demulcent lozenges. Where pharyngeal irritation, use slightly astringent lozenges: Ext. grameriæ, potassii chloratis, ana gr. xv (1); olei menth. pip., ♏j-ij (0.06-0.12); ext. glycyrrhizæ puri, 3iiss (10); ft. in trochiscos no. xxx. Steam inhalations, with 3j-ij of cpd. tr. of benzoin or oil of pine to a pitcher of hot water. Where bronchial secretions abundant: Inhalation from perforated zinc mask (Robinson's inhaler) of 10 drops of equal parts of alcohol, creosote, and chloroform. For pharyngeal irritation, also try sprays of 1 per cent. menthol or pine oil in benzoinol or albolene, or a

mixture of equal parts of menthol, camphor, and eucalyptol in 100 parts of benzoinol. For night cough: Warm drink before retiring; warming the bed; cross binder, above and below shoulders and across chest and back, previously dipped in cold water (60° F.) and covered with similar dry cross binder and a flannel jacket; renew in three hours or leave on all night. Strapping chest, where pleurisy. Sometimes counterirritation with iodine tincture or blisters over the apices or other site of irritation. For nervous cough: Bromides in 10- to 20- grain doses, chloral hydrate in 5-grain doses, or a combination of the two. Where wheezing and much secretion: Belladonna tincture, 10 to 20 minims, or atropine sulphate, gr. $\frac{1}{100}$ to $\frac{1}{50}$. Codeine, gr. $\frac{1}{12}$ at first, then $\frac{1}{8}$ or $\frac{1}{4}$ every two hours; heroine, in smaller doses; finally morphine, $\frac{1}{24}$ grain, increased if necessary. For abundant expectoration: Respiratory exercises, change in position, cross binder, and especially creosote inhalation and atropine. *Meara.* Page 239

Typhoid Fever. DIAGNOSIS. Early recognition of perforation facilitated by observation of concentric diminution of liver dullness. (See Pneumoperitoneum.) *Berg.* 108

Careful, repeated leucocyte counts claimed to afford earliest reliable means of typhoid diagnosis for general practitioner. Characteristic leucocytic picture: 1. Leucopenia, progressive, very likely preceded by slight leucocytosis. 2. Initial moderate polynucleosis, lasting first four to eight days. 3. Progressive, marked lymphocytosis, displacing polynucleosis and lasting well into recovery. 4. Increase in large mononuclears, beginning with onset of disease. 5. Sudden, early, and complete disappearance of eosinophiles. *Hultgen.* 116

New test for typhoid fever described: With fine hypodermic needle inject a few drops of suspension of dead typhoid bacilli, made by taking 1 drop of 1000 million vaccine and mixing it thoroughly with 20 drops of sterile saline solution. Inject intradermally and as superficially as possible. Typhoid patient shows absolutely no reaction, while non-typhoid patient shows an area of well-marked redness disappearing forty-eight hours after injection. *Prendergast.* 300

TREATMENT. Ipecac used in 6 cases with good results. In every case but 1 patient became afebrile within four days. Dose in the earlier cases, 30 grains (2 Gm.) on first evening, diminished daily by 5 grains down to 10 grains (0.65 Gm.); in other cases, 10 grains morning and evening, later decreased to 10 grains once daily; drug was given in salol-coated pills, preceded by tincture of opium to prevent vomiting. *Frazier.* 103

Lumbar puncture twice performed in a case with intense, persistent headache, second puncture bringing relief. *Oddo and Monges.* 178

Inoculation with typhoid vaccine considered a valuable measure, after experience with 50 cases. Best dosage, 50 to 100 or 150 millions every third day. Notable absence of severe complications and of tendency to relapse. Stock vaccine best. *Leishman.* 534

Where cold sponge baths fail to lower temperature, cold colonic flushing often effective. Use small colon tube, inserted just through the sphincter muscle. Pass 1 to 3 pints of water at 40° to 50° F. in small quantities into colon, and allow to return through tube. Repeat every four to six hours if temperature rises and is not reduced by sponging. *Penoyer.* 551

Hexamethylenamine found well borne in typhoid cases in doses of 7½ grains (0.5 Gm.) three times daily. It appears to be advisable to administer this drug in order to prevent relapses arising in convalescence through reentering into alimentary tract of bacilli from biliary apparatus. *Malan.* 677

Ulcer, Rodent. TREATMENT. Mixture of solid carbon dioxide and ether or alcohol found valuable for local application. (See Lupus.) *Sibley.* 603

Uncinariasis. TREATMENT. Beta-naphthol in 3 doses of 30 grains each at intervals of two hours, followed, again in two hours, by 6 drams of magnesium sulphate, found to expel 97.52 per cent. of total number of hookworms present. Thymol, in same dose, expelled 97.87 per cent., but caused serious constitutional disturbance. A 60-grain beta-naphthol treatment expelled 86 per cent. It was given as follows: Beta-naphthol, 4 drams (16); mucilage of tragacanth, 1 ounce (32); peppermint water, to make 6 ounces (192). *Nicol.* 230

Uremia. DIAGNOSIS. Depression of reflexes and positive Babinski phenomenon found valuable as a very early indication of oncoming uremia. Present in the stage of "preuremia." *Curschmann.* 48

Urethritis. DIAGNOSIS. Improved method of differentiating anterior from posterior urethritis described. Slowly inject 1 c.c. of 0.5 per cent. aqueous solution of basic fuchsin into anterior urethra and have it retained one-half to one minute, with slight massage. Allow fluid to escape and have patient urinate in 2 high glasses. If only stained shreds are present, there is no posterior urethritis; if only white, unstained shreds, infection is in posterior urethra; if both stained and unstained, process is both anterior and posterior. *Wolff.* 118

Urethritis due in about 5 per cent. of cases to *Micrococcus catarrhalis*. These cocci more rounded than gonococci; more of them extracellular; best differentiated by culture. Condition always subacute at first; symptoms mild, but rapidly intensify under frequent urethral injections. Period of incubation important: Often only one day, or else more than ten days; where three to ten days, probably gonococcic.

TREATMENT. Mild measures only. Sandalwood oil cures mild cases in week to ten days. In more severe forms, mild astringent often needed. In 1 case, weak organic silver solution found beneficial. *Ayres.* Page 551

Urticaria. TREATMENT. Venesection followed by injection of salt solution proved useful in some cases. (V. Pruritus, Treatment.) *Simon.* 365

Vaccination Site. TREATMENT. Picric acid applied to vaccinal lesion in 22 children, to harden tissues and prevent local infection. Four per cent. solution in 95 per cent. alcohol painted over and around vaccinal site forty-eight hours after vaccination and daily thereafter. Inflammatory reaction and constitu- with success of vaccination. *Schamberg and Kolmer.* 118

Varicose Ulcers. TREATMENT. Stimulate granulations with silver nitrate (30 grains to the ounce), cover ulcer with sterile gauze, and apply long adhesive straps to skin on either side of lesion till skin well wrinkled. Have foot elevated on pillows till it returns to normal size. Change adhesive straps upon alternate days or oftener. Massage and attention to bowels. Linen elastic stockings, put on over white stockings to absorb perspiration, after ulcer cured. *Gills.* 178

Following method found effective in healing ulcers resistant to other forms of treatment: Place patient under deep anesthesia; remove all crusts surrounding ulcer; pour on tincture of green soap and sterile water, and scrub the ulcer with an ordinary stiff brush, previously thoroughly sterilized. Continue scrubbing, washing off *débris* with clean water, until base of ulcer is smooth and edges stand out clearly, red and hard. Paint ulcer and immediate vicinity with tincture of iodine, and apply wet boric or bichloride dressing. Pain generally complained of after recovery from anesthetic, but if bandage is kept moist with warm solution it soon ceases. Granulation soon sets in at many places, and repair is rapid and satisfactory. *Beck.* 300

Following procedure advocated: 1. Place limb on inclined plane at 45°. 2. Cleanse ulcer and cover with gauze. 3. Exert strong pressure on limb by applying an elastic bandage from toes to knee, causing ischemia; remove bandage immediately after. 4. Apply suitable remedial preparations to ulcer and dress, with elastic stocking over all. Patient may walk at once. Method to be used only where no acute inflammation present. Results also good where eczema present. *Stephan.* 616

Verruca. TREATMENT. Use of 40 per cent. formaldehyde recommended. To be applied to lesion every three to six hours for two or three days, by means of wooden toothpick or matchstick. Care to be taken not to touch normal skin. Growths desiccate and exfoliate in several days to a week. If dermal layer still not free from blemish, another application or two secure desired results. Where open sore produced, use healing ointment of zinc oxide or simple cerate. *Hammond.* 539

Mixture of solid carbon dioxide and ether or alcohol found valuable for local application (See Lupus.) *Sibley.* 603

Vincent's Angina. DIAGNOSIS. Signs distinguishing it from lacunar tonsillitis are: 1. Absence of fever. 2. Pain more localized on affected side, and is severe, lancinating. 3. General malaise and physical exhaustion very marked.

TREATMENT. First perform gentle curettage of the tonsillar crypt involved. Then apply 12 per cent. silver nitrate solution. *Wherry.* 58

Salvarsan used locally, first in solution, then in powder, in a severe and obstinate case; prompt recovery. *Achard and Flandin.* 118

Vomiting of Pregnancy. TREATMENT. 1. Magnesium carbonate, 2 drams; magnesium sulphate, 1 ounce; mint water (1:40), 1 ounce; water, to make 8 ounces; wineglassful to be taken early in the morning. Cascara given daily in small doses for two or three weeks. 2. Simple diet; evening meal to consist only of thin porridge, gruel, or arrowroot. Koumiss; champagne, ½ hour before a meal. 3. Where relief from nausea only obtained after complete evacuation, encourage latter by the sipping of warm water. 4. Absolute recumbency in severe cases. 5. Drugs: Effervescing mixtures, salicin emulsion, phenyl salicylate, compound tincture of cardamom in dram doses, antipyrin or acetanilide with sodium bromide, small chloral and potassium bromide enemata, wine of ipecac in hourly minim doses; validol found most effective drug; menthol, 1 part in 60 of water, with 30 parts of alcohol or brandy, or chloroform (3 to 6 drops on sugar or in water) sometimes useful. 6. Rectal feeding, gastric lavage, laudanum stupes on epigastrium, ether spray, blistering of cervical spine, and ice-bags exert partly psychical effect. 7. Mental therapeutics, in purely neurotic type of vomiting. 8. Massage, electricity, blisters, etc., may help. *Hall.* 119

Whitlow. TREATMENT. Following measures recommended in thecal whitlow: Make preliminary puncture incision to evacuate pus, apply Martin bandage above elbow or knee, and dip affected part in hot Wright's solution. Depths of wound may with advantage be irrigated with same solution at outset, through cannula. When pain alleviated—in a few minutes—remove bandage, insert sufficient rubber drainage, apply gauze saturated with Wright's solution, equalize circulation by compression pad of non-absorbent cotton, and complete dressing with roller bandage and elevation of part. Patient should at home keep dressing moist and warm with the solution (2½ teaspoonfuls of salt and 1 large teaspoonful of sodium citrate in glass of hot water) and apply rubber bandage for thirty minutes every three hours. Inject

small dose of polyvalent stock pyogenic bacterins or, where septicemia present, large dose of antistaphylococcic serum. Inject weak iodine solution in lesion occasionally. Later, strive to restore function of parts by massage, passive motion, and if necessary tendon or fascia transplantation. *Skillern.* Page 420

Whooping-cough. DIAGNOSIS. Edema of the eyelids, especially the lower lids, sometimes appears before the cough and may be of assistance in the diagnosis. *Thursfield.* 97

TREATMENT. Ethyl carbamate found valuable to prevent nervous phenomena occurring when disease has run its course. Dose, ½ to 2 Gm. (7½ to 30 grains) in children under 2 years of age. *Bertling.* 490

Wounds. TREATMENT. Nuclein solution found useful to ward off infection in cases of crushed and lacerated hands, burns, varicose ulcers, minor cuts, etc. *Achard and Redfield.* 105

Sodium perborate found useful as a dressing in infected wounds and acute or chronic ulcers. *Herzfeld.* 167

Solution of aluminum acetate recommended for dressing of infected wounds. Made with aluminum sulphate and acetic acid, of each, 300 Gm.; calcium carbonate, 130 Gm.; distilled water, 1000 c.c. For use, dilute with distilled water, 1 to 7 or 10. *Stansbury.* 227

Book Reviews

A MANUAL OF CLINICAL CHEMISTRY, MICROSCOPY, AND BACTERIOLOGY. By Dr. M. Klopstock and Dr. A. Kowarsky, of Berlin. Only Authorized Translation from the Last German Edition, Thoroughly Revised and Enlarged. 371 Pages, with 43 Textual Figures and 16 Colored Plates. New York: Rebman Company, 1912. Cloth, $3.00.

This is a translation of a manual written by the authors for their "Institut für medizinische Diagnostik" in Berlin. Though intended chiefly for the general practitioner, it is in many respects full enough to serve as a very handy reference work for specialists in laboratory diagnosis, and contains much valuable material that is not infrequently lacking in works of this kind. Thus, in addition to the customary chapters on the study of the sputum, gastric contents, feces, urine, blood, and exudates, there are special sections on the bacteriological examination of the secretions and deposits in the mouth and pharynx, of the nasal secretions, of the conjunctival secretion, on the examination of the skin for the microorganisms associated with many of its diseases, and on the usual methods of bacteriological examination, the stains, and the customary culture media. As a rule, only one or two methods for each form of examination are described,—those which the authors have found of greatest value,—but this is no disadvantage, as it has permitted of the introduction of a wider variety of subjects into the volume, which is, indeed, remarkably complete, considering its size. Unduly brief, perhaps, is the section on hemoglobin estimation, in which only two methods, that of Sahli and the rather rough Tallquist scale, are described. The chapter on urine examination is very complete, and the section on examination for *Spirochæta pallida* is also particularly good. Of the illustrations, but few depict apparatus, but the microscopic appearances of the various secretions and excretions, normal and pathological, are well shown, especially in the colored plates at the close of the volume. The book is well worthy of recommendation to the practitioner.

DIE EXPERIMENTELLE PHARMAKOLOGIE ALS GRUNDLAGE DER ARZNEIBEHANDLUNG. Ein Lehrbuch für Studierende und Aerzte. Von Dr. Hans H. Meyer, Wien, und Dr. R. Gottlieb, Heidelberg, Professoren der Pharmakologie. Zweite, neubearbeitete Auflage. Pp. xx+554. Mit 64 z. T. farbigen Textabbildungen und 1 farbigen Tafel. Berlin und Wien: Urban und Schwarzenberg; New York: Rebman Company, 1911.

That a second edition of this book, which first appeared in 1910, should so soon be called for is evidence of the hearty welcome extended to it by the German medical profession. The work is the product of two of the world's foremost specialists in the subject of which it treats, and gives evidence throughout not only of their own extensive labors, but of a thorough assimilation of the literature of pharmacology, including the most recent. Numerous references are given throughout, yet so inconspicuously that they in no way interfere with the clear sequence of the text, though imparting to it a degree of authoritativeness obtainable in no other way.

The book is almost unique among works on pharmacology in the arrangement of the subject-matter, which is not divided into sections corresponding to the individual drugs

discussed, but to the structures or systems of structure in the body on which they act. Thus, there are successive chapters concerned with the pharmacology of the motor nerve endings, of the central nervous system, of the sensory-nerve endings, of the vegetative nervous system, of the eye, of the digestive tract, of the organs of reproduction, of the circulation, etc., in each of which the drugs acting on the particular functions discussed are brought together and compared. This plan, of course, necessitates that the drugs which act on several structures or systems shall be given divided consideration in different portions of the book, atropine, for example, appearing in the sections on the eye, circulation, respiration, digestive tract, and sweat. The disadvantage of having to refer to several portions of the book for a single drug is more than made up, however, by the accurate comparisons rendered possible in the discussion of drugs having similar but not identical effects upon a given organ. At the beginning of each chapter, moreover, is an introduction bearing upon the physiology and the general aspects of pharmacological action in relation to the organ under consideration, thus permitting of a better understanding on the part of the reader of the facts later to be set forth in connection with the individual drugs. Especially valuable and timely is the section on the pharmacology of the autonomic portion of the nervous system, the importance of which has been so greatly emphasized of late. Due information is given as to the chemistry of drugs, while historical paragraphs here and there impart to the text added interest. Excellent diagrams, tracings, and tables illustrate a number of the agents discussed.

Much new material has been added to the present edition in Chapter VII, on the pharmacology of the reproductive organs, as well as in Chapter XVII, which deals with agents acting directly on the causes of disease, such as antiseptics, anthelmintics, antitoxins, sera, and the specific remedies. An interesting new chapter on influences relating to the action of drugs in general, such as solubility, concentration of the poison in the blood, the condition of the organ subjected to drug action, antagonism, immunity, anaphylaxis, hypersusceptibility, etc., has been contributed by Prof. Meyer. All through the book the needs of the practitioner have been carefully considered.

The general impression left by the work is that the authors have come as near to a perfect exposition of the rational use of drugs, based throughout upon sound experimental and clinical evidence, as it is at present possible to supply. It is unquestionably one of the most satisfactory works on the subject available in any country.

Diseases of the Eye. A Manual for Students and Practitioners. By J. Herbert Parsons, D.Sc., M.B., B.S., F.R.C.S., Ophthalmic Surgeon, University College Hospital; Surgeon, Royal London (Moorfields) Ophthalmic Hospital; Late Ophthalmic Surgeon, Hospital for Sick Children, Great Ormond Street. Second Edition. 684 Pages, with 309 Text Illustrations and 18 Colored Plates. Philadelphia: P. Blakiston's Son & Co., 1912. Cloth, $4.00, net.

In the second edition of this excellent manual, the text has been revised and several new sections added. New text illustrations have been introduced and some of the old ones transferred to plates. As before, the work is divided into 6 parts, dealing respectively with anatomy and physiology, examination of the eye, diseases of the eye, errors of refraction, disorders of motility of the eye, and diseases of the adnexa of the eye, viz., the lids, lachrymal apparatus, and orbit. Though not large, the book is a very complete one, and fills admirably the needs of the student and general practitioner. Especially good are the chapters on diseases of the cornea and of the eyelids. The illustrations are numerous and well-chosen, the colored plates especially being of unusual excellence. If any adverse criticism is warranted, it is that the details of medicinal treatment are insufficiently given, the author too often resting content with mentioning the names of the drugs to be used without giving further particulars. All operative procedures, however, are fully and accurately described. On the whole, the work is a very pleasing and satisfactory one, which we take pleasure in recommending.

The Physician's Visiting List (Lindsay & Blakiston's) for 1913. Philadelphia: P. Blakiston's Son & Co., 1912. Leather Cover, $1.25, net.

This visiting list is now issued for the sixty-second time. In addition to the ruled blank pages for the recording of visits, addresses, bills, and accounts, obstetric engagements, etc., it contains a calendar for 1913 and 1914, a table for calculating the period of utero-gestation, information on the incompatibilities, the treatment of poisoning, the weights and measures, with conversion tables, a dose table, the treatment of asphyxia and apnea, etc. Intended to be the physician's constant companion, the book is of convenient size for carrying in the pocket, into which its smooth, leather covering will enable it easily to slip.

The General Field

Conducted by A. G. CRANDALL

A Year of Turmoil

Those placid souls who deplore all human strife have had a hard year.

The dove of peace has found no resting place on this side of the world.

The election of Mr. Wilson was easily accomplished in spite of a tendency of his supporters to forget that they were themselves running a campaign and to pause and look on in wonder at a Kilkenny contest among their erstwhile united and aggressive opponents.

But with the dawning of a new year let us hope that all worrying factions may agree upon a truce, and that industrial, financial, and political soothing syrup may be administered with a lavish hand by the new administration.

Similar treatment seems also to be indicated across the Atlantic.

Educate the Layman

Such is the awe with which the traditions of the medical profession are regarded that it behooves the doctor to study well his lessons of professional decorum. But when they are learned it's well to take account of stock.

The letter of the law is often quite a contrast with any practical way of carrying it out. And the law which forbids a doctor to advertise his cures often might be evaded with advantage to the public. Such, however, is the awe for ethics that the doctor almost invariably looks with contempt upon the medical man who "takes the public into his confidence" and tells of his own achievements.

But there are several clever writers on lay medical topics who are doing a good deal at present to help the code-bound doctor to more of that high esteem of the public which is his due. Anything which opens the eyes of the lay reader to an understanding of the almost endless possible consequences of hygienic ignorance causes his appreciation of the doctor and his sense of dependence upon him to develop rapidly.

A large number of otherwise sane and reasonable citizens act on the principle that never to give the problems of a healthy condition of the various organs a single thought is the part of wisdom.

Of course, it doesn't work out in anything else. It is necessary to make frequent examinations of automobiles, horses, carriages, roofs, and plumbing systems. Not to do this is negligence in all things except one's health. But to keep away from the doctor as long as possible, such is the philosophy of a large number of otherwise sensible people.

This point of view is happily changing. The average doctor's practice should consist of at least three-fourths prevention. And the surest way to bring about that highly desirable and rational situation is to encourage the lay public on all possible occasions to inform themselves as to what normal health is.

This being done, the next logical step of the patient is to secure the doctor's co-operation in making the human machine run smoothly.

The Demand for Heroes

The popular fancy is most stirred by exhibitions of physical courage when there is real occasion for it.

There is less foolhardiness in aviation

lines than formerly. Somehow, people were not impressed. There were big risks and it was quite wonderful, but when the daring aviator was dashed to pieces somehow it was not regarded the same as when some before-unheard-of fireman lost his life in an attempt to save a poor family in a tenement.

The physician often takes serious risk of infection and people know it. But in this risk there is no purpose of trying to catch the public eye. It is all a part of the day's work. And when a brave life is thus lost the sacrifice is fully appreciated.

The public, therefore, draws a close distinction between bravery and foolhardiness; between the policeman who as a matter of course quells a street riot and the man who leaps from a high bridge.

The demand for heroes apparently shows no abatement, but they must be of the practical type. The cost of rearing a full-grown man is now too high for most people to regard foolhardiness with patience.

Mr. Wilson's Sleeping Habits

The industrious news builder has circulated the report that Mr. Wilson, president-elect, is accustomed to sleeping from ten to twelve hours each night.

We hope it is true. Nothing is more desirable in this country than the example of people in high places devoting large spaces of time to the rejuvenation resulting from liberality in the matter of sleep. And unless all signs fail, Mr. Wilson will have to devote a great deal of attention to the matter of "knitting up the raveled sleeve of care." The pressure on him is sure to be immense.

Furthermore, it is due to his party chiefs that in his capacity as executive Mr. Wilson presents a sharp contrast to his immediate predecessors, who were disposed to keep late hours. If Mr. Wilson can excuse himself at 8.30 P.M. and retire to the seclusion of his sleeping apartments, he is likely to escape a good deal of perturbation and will have a clearer head with which to wrestle with the problems of State, and especially with the "high price of living," for which it is evident that a large number of the populace regard the president as directly responsible.

We sincerely hope that the news correspondent's information as to Mr. Wilson's customs of sleep is authentic, and that a new era of slumber and sanity is upon us. Certainly nothing is more calculated to endear the president-elect to Philadelphia.

Morbid Curiosity

With the fullness of detail which makes our American murder trials a financial harvest to the yellow newspapers comes the usual sordid tale of a trial in a Western city. But in this instance, instead of the usual stern insistence by the presiding judge that decorum be observed even if publicity is to be commercialized, the report comes over the wires that at a specially sensational part of the testimony the presiding judge left the bench and, as a spectator, took his seat in the audience, composed, to a large extent, of morbidly curious females, one of whom, in the struggle for a favorable location, broke an arm. It is worthy of note that as soon as the woman could get her arm adjusted in a splint she came back to enjoy the salacious testimony.

Nothing more fully illustrates the caliber of a trial justice than his attitude toward those who seek to gratify morbid curiosity, as spectators in a murder case.

The Potency of Environment

When the producer ceases to produce and, like the thrifty squirrel, falls back upon an ample hoard with no fear of want, then is the time when introspection searches out the lurking symptoms, and unless the mental poise is well-nigh perfect succeeds in magnifying them to colossal proportions, and in many instances a condition follows which, by contrast, makes the situation of the day laborer, but a scant distance removed from actual want, seem much more desirable.

Hence the aphorism that it is better to wear out than rust out.

There is now and then a doctor who possesses actual genius for the suggestion of suitable occupations and diversions for those who find the stress of active business too taxing, but must earn something, and especially those who by early industry or good fortune have ample to provide for all needs. A suggestion given on the impulse of the moment by the busy doctor and forgotten by the same busy doctor five minutes later may be bearing fruit ten years later and have secured for that doctor thousands of dollars in practice. Nothing is appreciated more by the average patient than practical recognition of the important question of occupation and environment.

As the successful parish clergyman is usually measured by personal qualities rather than oratorical gifts, so is the family doctor often valued more by his words of counsel than by his pellets. It is not a desirable thing for most people who have passed the meridian of life to be continually seeking a change of environment even if possessed of the financial means to accomplish it; hence the great opportunity for the family doctor in suggesting novel changes in the home environment. The possession of such a faculty can usually spell success even in a poor neighborhood.

The Suffragists in High Feather

The suffragists are greatly encouraged by recent extensions of their zones of influence. The time is looming up when they will be placed on their records and called upon to make good.

They have promised a great deal. Most of the evils of modern life are to vanish shortly after the full and untrammeled use of the ballot has been secured by woman.

It is greatly to be hoped that the woman suffragist will be more successful in regulating the weak points of the masculines than the men wielders of the free and untrammeled ballot have been in curbing a few eccentricities of the fair sex. Take, for example, that little fad of wearing birds' plumage upon women's headgear. It is well known that one cause of the high prices of food products is the necessity of a relentless and incidentally expensive warfare upon insect pests. The bird is a most useful aid to the farmer in this contest, but the feathered ally who is unfortunate enough to have a beautiful plumage is rapidly being exterminated in the interest of the five o'clock tea and the things that pertain thereto. To be sure, mere man has passed numerous ordinances calculated to protect the plumage birds and some miles of appeals to the better nature of lovely woman have been published in the uplift magazines, but, perhaps, it will be different now.

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